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STATISTICS OF THE WEST.

THE WEST:

ITS

SOIL, SURFACE, AND PRODUCTIONS.

BY

JAMES HALL.

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PREFACE.

The greater portion of the following work was published some years ago, under the title of "Notes on the Western States;" but as that, or a similar name, has since been adopted for several other publications, it has been thought expedient to change it to that which now appears on the title page. It is a matter of but little importance; but it is deemed proper to make the explanation, to avoid even the appearance of publishing, as a new work, a revised edition of one which has been long before the public.

In preparing these pages for re-publication, it was found that much of the matter had been rendered obsolete, by the rapid growth of the country, and required to be written over. There were other portions of the work, descriptive of the great outlines of the country, its natural divisions and permanent features, which are as true now, as when originally written, and which, as expressing the early and vivid impressions of the author, are retained without alteration.

The amount of new matter introduced, has been considerable, and has rendered it advisable to omit several chapters of the former work, which will be thrown into another volume, and published as an additional series of this work.

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THE WESTERN PLAIN.

CHAPTER I.

The Western Plain—Its Limits—Its Topography—The General Character of its Formation—Its Mineral Resources.

In order to understand the subject distinctly, it will be necessary to consider carefully the topography of that part of the valley of the Mississippi embraced within our remarks, with a few of its geological features. It extends from the western slope of the Allegheny mountains, to the great sand plains of the west, a distance of about fifteen hundred miles; and from the northern lakes to the mouth of the Ohio, a distance of about six hundred miles.

We confine ourselves chiefly within these limits, because they circumscribe a territory naturally connected, by similarity of climate, and contiguity of territory. It is properly *the West*, the seat of what is called the Western population, and the most valuable tract of country in the United States. It embraces the states of Kentucky, Ohio, Indiana, Illinois, Missouri, Iowa, and Michigan, and parts of Virginia, Pennsylvania, and Tennessee, and a region of about five hundred miles in width lying west of those organised boundaries. There is probably not on the globe, an equal expanse of surface, of such uniform fertility; and when in addition to that advantage, we take into view, its temperate climate, its salubrity, the abundance of its mineral resources, the

variety of its productions, the multiplicity and extent of its navigable communications, and its central position in relation to our continent, it will be conceded that there is none which better deserves to be described and studied.

The term *valley*—the valley of the Mississippi—which is popularly applied to this region, does not express its real character, as it is in fact a plain, one of the most remarkable features of which, is the great extent of level surface embraced within its area; for although undulations, and even hills, sometimes swell before the eye of the traveler, the general plane is almost invariable. The difference in elevation over its whole surface—leaving out of view a few unimportant local inequalities—is only a few feet. There is, however, a gradual declination from the north east, towards the southwest. This will become obvious from an examination of the annexed table, compiled by Colonel Long, and founded on actual observations had in his expedition to the sources of the St. Peter river.

A table shewing the probable altitudes, in feet, of the water level, at a variety of points therein specified, above tide water.

Points Indicated.	*Elevation.*
Mouth of the Ohio River	300
Ohio River at Cincinnati	414
Do. at the mouth of Sciota River	464
Do. at the mouth of Muskingum River	541
Surface of Lake Erie; River des Plaines 20 miles above its mouth; Mississippi at the head of the rapids Des Moines; and the Ohio, a few miles below Wheeling, Va.	565
Lakes Huron and Michigan	571
Lake Superior	595
The Ohio at Pittsburgh; the Mississippi at St. Peters; and the Missouri at the mouth of the River La Platte	680
Sources of the St. Peter and Red Rivers	830
Source of the Muskingum	902
Source of Big Beaver	907
Source of the Sciota	919
Source of the Miami	964
Lake of the Woods	1040
Rainy Lake	1100

Points Indicated.	*Elevation.*
Sources of the streams on the route of the Expedition, tributary to lakes Winnepeck and Superior; and head waters of the Mississippi - - -	1200
Dog Lake - - - - - - - - -	1000
Lake Winnepeck - - - - - - -	630

These elevations may be relied upon, as possessing all the accuracy desirable for the purpose of topographical description, having been derived from sources entitled to the highest credit. They have reference to the water surface, and shew, that from Pittsburgh, the Ohio river has a descent of less than four hundred feet, to its mouth,—a distance, by its meanders, of eleven hundred miles; and that from the sources of the Mississippi to the same point, the descent is only about seven hundred feet. The surface of the plain itself approaches still nearer to an actual level. Its north east corner near Pittsburgh, lies about seven hundred feet above the tides; the plains of Kentucky and West-Tennessee are about the same height, and as we proceed westwardly up the Missouri or Arkansas, we reach similar elevations. These are the exterior limits of the plain which descends as well from the Rocky Mountains, as from the Alleghenies, towards the Mississippi.

"The great and numerous rivers that cross this plain," says an acute writer in the American Quarterly Review, "instead of forming distinct valleys, do but indent narrow lines or grooves into its surface, barely sufficient to contain their floods. These river channels, as the current rolls on, must form a declivity, and towards the lower parts of their courses sink deep into the plain; hence the large rivers, Ohio, Missouri and others, seem bordered with abrupt hills of several hundred feet elevation; but the tops of these hills are the level of the great plain, and are formed by smaller streams which fall into those large rivers, where their channels are thus worn down; and to give themselves an easy slope, these

streams must wear down, in a corresponding manner the neighboring parts of the plain; and presenting abrupt points between them, shew the appearance of river hills." We give the language of another, in this instance, rather than our own, that our views may be corroborated by those of other persons.

When we take into view the level surface, its uniformity of conformation, and the fact that it rests on a continuous *stratum* of rock, which is found to preserve its horizontal position with remarkable regularity, it is not surprising that comparatively few water courses take their rise within the more central parts of its limits, and that the subterranean currents, which are abundant, seldom rise to the surface, but find vent upon the margins of streams, where the valley has been washed down to their level. Rich as our country is in noble rivers, almost all of those of superior magnitude take their rise in the distant mountains, and receive comparatively but little tribute from the wide regions through which they roll; and thus the great streams, which in the spring of the year, when swelled by heavy rains, and by the melting snows of the mountains, fill their banks to overflowing, become exhausted in the summer and autumn, by undergoing in their long meandering courses, the impoverishing processes of evaporation and absorption, while they receive but little accession from their tributaries. The Ohio, Missouri, Cumberland, Tennessee, Arkansas, Red River, and all the great rivers of Tennessee and Kentucky, take their rise in the mountains, and the Mississippi flows from a region beyond the limits of our plain; the Illinois, Wabash, Sciota, Muskingum, Miami, and others of secondary importance, originate in the interior of the plain, and afford but little water during the dry part of the season.

The formation of this plain, as the reader will have already discovered, is secondary. It rests upon a hori-

zontal limestone pan, of such depth that its thick *strata* have never been pierced through, although the auger has penetrated into it in search of salt water, in many places, from four to six hundred feet. The rock lies but a few feet below the surface, and supports throughout its whole extent, strata of bituminous coal, and saline impregnations. To the decomposition of this limestone may be attributed, in part, the fertility of the soil, while its absorbent and cavernous nature, prevents the accumulation of swamps and standing pools, and renders the whole plain dry and salubrious, in a remarkable degree. The most striking indications of the cavernous character of the limestone, are to be seen in Kentucky and Tennessee, where gigantic caves extend their varied and gloomy ramifications, throughout the whole of the *substrata* of widely extended districts. The curious have explored some of these cavities for many miles, and spent successive days, in examining their winding passages, and prodigious chambers, without being able to discover their utmost limits. The same singular configuration of the limestone is inferred, in other places, in nearly all the western states, by the existence of curious depressions of the earth, popularly called *sink holes*, which are deep funnel shaped cavities, sinking abruptly from the surface of the soil, and extending down to that of the rock, and which are doubtless caused by the dropping of the earthy particles, through some fissure of the limestone. These holes are often found in large groupes, when they present a most singular appearance. They are usually dry; but instances occur, where the outlet at the bottom having become choked by some impervious substance, the rain water accumulates, and remains unexhausted throughout the year.

In the year 1811, a series of earthquakes continued for a few months, to shake the whole southern portion of this immense district. The region of Kentucky south

of Green river, and southern parts of Illinois and Missouri, formed the chief scenes of this alarming phenomenon, the vibrations of which were however felt in a slight degree in the higher latitudes of the plain. The shocks were sufficiently severe to prostrate chimnies, and to cause the timbers of log and framed houses to be shaken, and even separated. At New Madrid on the Mississippi, the earth yawned, and the inhabitants were driven from their homes; and at one point in that vicinity, so large a quantity of water is said to have been engulphed in a chasm beneath the bed of the river, that this mighty river ceased for a moment to roll its waters towards the ocean. The latter statement, however, must be received with caution, as it rests solely upon the hasty observations of a few panic stricken voyagers, through an almost uninhabited region. The terror caused by this visitation was very great, and it still continues to be a prominent subject in the traditions of that part of the country. But there is not the slightest reason for believing in the existence of any permanent causes, which would render this plain liable to such occurrences. In the thirty-six years which have subsequently elapsed, the alarm has not been repeated; while the uniformity of the surface of this country, and the remarkable absence of the appearances that indicate the disruption of the strata, shew that such events had not occurred in earlier times.

The first settlers, and the earliest travelers, spoke of hurricanes of vast extent and tremendous power, as among the peculiar phenomena of this plain; but their statements have not been confirmed by experience. Those who travel over uninhabited countries, or reside in temporary dwellings in the wilderness, are exposed in a greater degree than ordinary, to the accidents of the seasons, and are apt to magnify those usual occurrences, which might have passed unobserved under other circumstances, when less personal inconvenience or danger

would have resulted from them. The diversities of temper, and of physical organisation, are so numerous, that we should receive with great distrust, any observations upon climate, detailed by persons who are exposed to its action for a season, and who neither make deliberate scientific experiments, nor report a series of facts, carefully recorded.

The same course of reasoning may be applied to the alledged variability, and the reputed unhealthiness, of our climate. Facts of such grave importance should not be considered as settled, by that common rumor, whose want of veracity is so notorious. The results of patient and careful investigation, by competent men of science, will hereafter decide these points, and will, in our opinion, shew that the current reports in relation to these matters, have been in direct opposition to the truth.

When we speak of the present advantages, and future greatness, of the West, it is proper that we should discriminate, so as not to deceive those who have not the means of judging for themselves. The climate differs but little from that of corresponding parallels of latitude, in the United States. So far as health is concerned, we suppose the advantage to lie on our side of the mountains, while in reference to vegetation, there is no observable difference.

Neither is there any supernatural fertility in our soil, which yields its rich returns only under the operation of careful and laborious tillage. It is the great breadth and continuity of our fertile surface, which gives to the West its superior advantages. It is the accumulation within one wide and connected plain, of the most vast resources of agricultural and commercial wealth; and the facilities afforded by our country, for concentrating and using an unlimited amount of wealth, and bringing into combined action the energies of millions of industrious human beings, on which are based the broad foundations of our greatness.

With the breadth of an empire, we have all the facilities for intercourse and trade, which could be enjoyed within more limited boundaries. Our natural wealth is not weakened by extension, nor our vigor impaired by division. The riches of soil, timber, and minerals, are so diffused as to be every where abundant; and the communication between distant points is so easy as to render the whole available. The products of the industry of millions may be here interchanged with unparalleled ease and rapidity; and when our broad lands shall be settled, there will be a community of interest, and an intimacy of intercourse, between myriads of men, such as were never before brought under the operation of a common system of social and civil ties.

The mineral resources are abundant. The coal, which is pure and excellent, spreads throughout the whole region, and is in most places easily accessible. Iron ore abounds generally: especially in Pennsylvania, Tennessee and Missouri, and the best ore is said to yield seventy-five per cent. of fine malleable iron. At Pittsburgh and Cincinnati, but particularly at the former place, this metal is wrought into a great variety of manufactures. The lead districts of Illinois and Missouri, would cover two hundred miles square, and form undoubtedly the richest region of that metal which has been discovered on any part of the globe. The French resorted to these mines many years ago, but it is only recently that their extent and value have been made known; yet something like twenty millions of pounds of lead have been smelted at them, in the course of one year, and there is no question of their capacity to afford a permanent supply of that useful metal to the whole civilized world. The cavernous region of Kentucky has been found to be strongly impregnated with salt-petre, of which vast quantities have been made and exported. Copper has long had a traditionary existence, in the neighborhood of the north wes-

tern lakes. The ore has been found in small quantities in different places, and at one spot a solid mass weighing several tons, of remarkable purity, has attracted the attention of the curious; but it is only within a few years past that rich and extensive mines of this mineral have been discovered. Salt is an important article of manufacture. Saline springs are distributed throughout the whole region, some of which are copious and strongly impregnated. On an average, one hundred and twenty gallons of the water will make sixty pounds of salt, but it is much stronger in some places than at others. Of the mineral waters the chalybeate is most frequently found, impregnations of pure sulphur are common; those of copperas, alum, and sulphate of magnesia, are occasionally met with.

In treating the subjects under consideration more in detail, we shall be under the necessity of dividing the region under consideration into two separate districts, and to speak occasionally of the valley of the Ohio, and that of the Mississippi; for although the whole forms, in fact, one great, and remarkably uniform plain, there are yet some striking peculiarities which distinguish each of these rivers, as well as the lands lying upon their margins. Of these peculiarities I propose to treat under the several heads into which this work will be divided.

CHAPTER II.

The River Ohio.

It may be well to commence our rapid sketch of this river, with an attempt to explain the etymology of its name. We shall, however, do no more than present the views of messrs. Duponceau and Heckewelder,—two gentlemen who have bestowed great attention upon the

aboriginal languages of our country,—as expressed in a paper in the Transactions of the American Philosophical Society.

From this communication, it appears evident, that the idea, which has prevailed to some extent, that the word Ohio is derived from the Iroquois language, is not correct. It has been said, that the Iroquois Indians called the Ohio the *fine* or *beautiful* and sometimes the *bloody* river. Mr. Duponceau examined the vocabularies of that language, for the words corresponding with these terms, and became satisfied that the word Ohio was not derived from them. Farther examination, satisfied his mind that the position taken by Mr. Heckewelder, is correct, which is, that the term Ohio is derived from a word or words in the Delaware language, which mean the *white* or the *white foaming river.*

Mr. Heckewelder expresses the opinion that the four letters composing the word *Ohio* do not comprise the whole of the Indian name. His reasons are the following:

1st, That the names given by the Indians to rivers, are invariably descriptive either of those streams or something about them.

2nd, That he had never heard the Indians call this river by the name of Ohio.

3d, Because the French and English, in using Indian names, are accustomed to drop a part of them, to render the pronunciation easy.

Mr. Heckewelder then gives a list of words from which he argues that this name has been derived; some of which, with their meaning in the English language, are here quoted.

O'hui—Ohi, very.

O'peu, white.

Opelechen, bright, shining.

Opeek, white with froth.

Ohîopéchen, it is of a white color.

Ohiopeek, very white, (caused by froth or white caps.)

Ohiophanne, very white stream.

Ohiopeekhanne, very deep and white stream, (by its being covered over with white caps.)

Ohiopehhele, which signifies white frothy water.

Mr. Heckewelder then adds, "'The Ohio river being in many places wide and deep, and so gentle, that for many miles, in some places, no current is perceivable: the least wind, blowing up the river, covers the surface with what the people of that country call *white caps;* and I have myself, for days together, witnessed that this has been the case, caused by southwardly and south-westwardly winds, so that we, navigating the canoes. durst not venture to proceed, as these *white caps* would have filled and sunk our canoe in a minute. Now in all such cases, when the river could not be navigated by canoes, nor even crossed with this kind of craft—when the whole surface of the water presented white foaming swells, the Indians would, as the case was at the time, apply one or other of the above quoted words to the state of the river; they would say 'juh Ohiopiechen,' 'Ohiopeek ohiopeekhanne;' and when they supposed the water very deep, they would say, 'Kitschi ohiopeekhanne,' which means, 'verily this is a deep white river.'

Again recurring to the habit of abbreviating Indian words, so generally prevalent among the French and Americans, Mr. Heckewelder concludes his interesting remarks upon this subject, with the supposition that at an early day, the emigrants to the west, took the first syllable of the Indian name 'Ohiopekhanne,' because both easy to pronounce and to keep in the memory.

The river Ohio, for some distance below Pittsburgh is rapid, and the navigation interrupted in low water by chains of rock extending across the bed of the river. The scenery is eminently beautiful, though deficient in grandeur, and exhibiting great sameness. The hills, two

or three hundred feet in height, approach the river, and confine it closely on either side. Their tops have usually a rounded and graceful form, and are covered with the verdure of an almost unbroken forest. Sometimes the forest trees are so thinly scattered as to afford glimpses of the soil, with here and there a mass, or a perpendicular precipice, of grey sandstone, or compact limestone, the prevailing rocks of this region. The hills are usually covered on all sides with a soil, which though not deep, is rich.

Approaching towards Cincinnati, the scenery becomes still more monotonous. The hills recede from the river and are less elevated. The bottom lands begin to spread out from the margin of the water. Heavy forests cover the banks, and limit the prospect. But the woodland is arrayed in a splendor of beauty, which renders it the chief object of attraction. Nothing can be more beautiful, than the first appearance of the vegetation in the spring, when the woods are seen rapidly discarding the dark and dusky habiliments of winter, and assuming their vernal robes. The gum tree is clad in the richest green; the dogwood and red-bud are laden with flowers of the purest white and deepest scarlet; the buckeye bends under the weight of its exuberant blossoms. The oak, the elm, the walnut, the sycamore, the beech, the hickory, and the maple, which here tower to a great height, have yielded to the sunbeams, and display their bursting buds, and expanding flowers. The tulip tree waves its long branches, and its yellow flowers high in the air. The wild rose, the sweet-briar, and the vine, are shooting into verdure ; and clinging to their sturdy neighbors, modestly prefer their claims to admiration, while they afford delightful promise of fruit and fragrance.

The scenery still exhibits the same appearance, as we continue to descend the river, except that the hills gradually become less bold and rocky. The shores of the

Ohio do not any where present that savage grandeur, which often characterises our larger streams. No tall cliffs, no bare peaks, nor sterile mountains, impress a sentiment of dreariness on the mind. The hills are high, but gracefully curved, and every where clothed with verdure. There is a loneliness arising from the absence of population, a wildness in the variegated hues of the forest, and in the notes of the feathered tribes; but the traveler feels none of that depression which results from a consciousness of entire insulation from his species, none of that awe which is inspired by those terrific outlines that display the convulsions of nature or threaten the existence of the beholder. It is impossible to gaze on the fertile hills and rich bottoms that extend on either side, without fancying them peopled; and even where no signs of population appear, the imagination is continually reaching forward to the period when these luxuriant spots shall maintain their millions.

The absence of population alluded to, is to be considered in a comparative sense. With Ohio, Indiana and Illinois on the one hand, and Kentucky and Virginia on the other, there can be no dearth of inhabitants; but their dwellings are less frequently presented to the traveler's eye than might be supposed. We continually pass villages, great or small, and farm houses are scattered along the shore; but we often float for miles without discovering any indication of the residence of human beings. Many of the river bottoms are inundated annually, and land has not yet become so scarce or valuable as to induce the owners to reclaim these spots from the dominion of the water. Such places remain covered with gigantic timber, which conceals the habitations beyond them. The commanding eminences are seldom occupied, because the settlers are farmers, who consult convenience, rather than beauty, in the location of their dwellings, and who generally pitch their tents in the vicinity of a spring, upon the low grounds.

One peculiarity, which is common to this river and the Mississippi, and is perhaps owing as well to their great volume of water, as to the nature of the secondary formation through which they roll, is the rounded and graceful shape of their meanders. The noble stream, clear, smooth, and unruffled, sweeps onward with regular majestic force. Continually changing its direction, as it flows from vale to vale, it always winds with dignity, and avoiding those acute angles which are observable in less powerful streams, sweeps round in graceful bends. The word *bend* is very significantly applied, in the popular phraseology of this region, to express these curvatures of the river.

The beautiful islands, which are numerous, should not be forgotten. These are sometimes large and fertile, but generally subject to inundation, and seldom under tillage. Sometimes they are mere sandbanks, covered with thick groves of the melancholy willow, whose branches dip into the water. The term *tow-head*, is significantly applied to the latter, by the boatmen.

Below the Falls of Ohio, we find a country, not essentially different from that above, but presenting a different appearance to the eye, as viewed from the river. The change has been so gradual, that the traveler only now begins to realise a diversity of surface, soil, and climate The country is flat, the soil is deep, black, and rich. Small ranges of hills are seen at intervals; but the rock foundation is seldom exposed to the eye. The river-bottoms become more extensive, exhibit decided appearances of annual inundation, and are intersected by *bayoux*, or deep inlets, which are channels for the water in time of flood, and remain empty during the rest of the year. *Cane-brakes* are occasionally seen along the banks. The cane is an evergreen, from twelve to twenty feet in height, which grows chiefly in rich flats. It stands so thick upon the ground, as to form an almost impenetrable

thicket, and as it is usually, in this region, found among ponds and *bayoux*, the *cane-brake* is always a secure retreat for *bears*, which feed upon the buds, and for deer and other gregarious animals. The first settlers find them very valuable, as affording food for their cattle during the winter; and even after the country has been many years settled, the inhabitants drive their cattle *to the cane* in the autumn, and suffer them to remain without any further attention until the ensuing spring. The cane, however, is generally destroyed in a few years, by the large number of cattle which are thus wintered upon it. Cattle and horses eat it greedily, and will stray several miles in search of this favorite food, which is said to be very nourishing.

Cotton-wood, peccans, catalpas, and gigantic sycamores, are now seen in the rich bottoms. Extensive groves of cotton-wood sometimes clothe the shores of the river. The tree is large, and extremely tall; the foliage of a rich deep green, resembling that of the *Lombardy poplar*, to which tree this also assimilates somewhat in shape. Nothing can exceed the beauty of these groves: at a distance, a stranger might imagine them forests of Lombardy poplar; and as that tree is devoted to ornamental purposes, it is scarcely possible to refrain from fancying, that some splendid mansion is concealed in the impervious shade; while the deep gloom with which they envelop the soil, gives a wild, pensive, and solemn character, to the *cotton tree grove.*

The catalpa is a small graceful tree, remarkable for the beauty of its flowers. The peccan is a tall tree, resembling the hickory, to which it is nearly related; it yields a rich, fine nut, of which large quantities are annually exported. It is found on the margin of the Ohio and Wabash for a short distance above and below the junction of those rivers, and within the corresponding parallel on the Mississippi, but not elsewhere in this region. Grape-

vines are numerous and very large, the stems being some times nearly a foot in thickness, though seldom exceeding six or eight inches, and the branches extending to the tops of the tallest trees.

The misletoe is seen hanging from the branches of the trees throughout the whole course of the Ohio. It becomes more abundant after passing Cincinnati, and is seen in the greatest profusion between Louisville and the mouth of the river. This little plant never grows upon the ground, but with a very poetic taste, takes up its attic residence upon the limbs of the tallest trees. The berry which contains the seed, is so viscous as to adhere to the feet of birds, who carry it from tree to tree, and thus contribute to the propagation of this ornamental parasite.

The paroquet is now seldom seen north of Cincinnati. They are abundant below Louisville, where flocks of them are heard chattering in the woods, or beheld sporting their bright green plumage in the sunbeams.

One of the most remarkable characteristics of this, and other western rivers, is the vast and rapid accumulation in the volume of water which takes place, usually in the spring, but occasionally at other seasons, and is caused by the immense extent of the territory drained.

When the waters are low, as is commonly the case, in the dry seasons of the summer and autumn, the majestic Ohio dwindles to a small stream, affording but limited facilities for navigation. Among the hills of Pennsylvania and Virginia, it is seen rippling over chains of rock, through which a passage is barely afforded to boats of the lightest burthen. Further down, its channel is but rarely obstructed by ledges of rock ; but instead of these, a series of sandbars, extending in some places from shore to shore, and in others projecting from the margin of the river far into its bed, and covered by but a few inches of water, render the navigation almost impracticable. Steam boats constructed for the purpose, and navigated by skill-

ful pilots, ply with difficulty from port to port. Many are grounded upon the bars, from which perilous situation some are relieved with great labor, while others are obliged to remain exposed to the elements, during the rest of the season, and are either lost, or seriously injured. The larger boats are wholly useless during this part of the year; and of the hundreds of noble vessels that are seen at other times actively plying upon these rivers, freighted with rich cargoes, the greater portion now lie inactive.

As a general rule, it may be stated that the water is lowest during the months of July, August, and September. The autumnal months are frequently dry, and the river remains low, in that case, until the winter. More usually there are slight rises of water throughout the fall season, which render the navigation practicable; and as the weather becomes cold, there is a gradual increase in the volume of water. Throughout the winter, the frequent changes from cold to moderate weather, produce rains and rapid thaws, which occasion a series of freshets. and afford an ample supply of water.

The change from the severe cold of the winter, to the higher temperature of spring, is usually sudden, and is attended by the precipitation of vast floods into the channels of the larger rivers. The snows that lie deep upon the Allegheny mountains, are rapidly melted, and the immense mass of water which is thus produced upon the whole of the western declivity of that wide chain, from the borders of New York to those of North Carolina, are thrown into the Ohio. If the melting of the snow is accompanied by heavy and general rains, which is often the case, it will be seen that causes are brought into operation, of sufficient magnitude to produce the most astonishing results. The long and deep channels of the rivers become filled to overflowing, the islands sink beneath the surface, the alluvial bottoms and lowlands are

covered, and we gaze upon a mass of waters, the immensity of which creates a feeling of awe, as well as of intense curiosity.

This accumulation is attended with but comparatively few inconveniences, and scarcely any danger, while its beneficial effects are incalculably great. The arrangements of Providence, intended for the advantage of man, however gigantic and uncontrollable, seldom carry with them any cause for terror. We have none of those sudden and precipitous floods, which in mountainous districts, are sometimes poured down upon the valleys, with unexpected violence, attended by widespread desolation of life and property. Our rivers rise with rapidity until the channels become nearly filled; but as the waters swell to the brink, the width and capacity of these reservoirs become so great, the inlets and branches so numerous, the lowlands to be covered so wide, that the perpendicular accumulation of the volume becomes slow and gradual. After leaving the immediate region of the mountains, the descent of the water courses is so gradual, as to prevent the flood from rolling forward with violence, while the channels prepared for it by nature, and planned upon the most magnificent scale, are too immense to be rapidly filled to overflowing.

In speaking of the lowlands which border on the river Ohio, we use a phrase, which is comparative in its import. When the waters are low, or even at the medium height which affords safe navigation for the largest vessels, the voyager sees the alluvial banks high above him on either hand, and can scarcely imagine that any concurrence of ordinary natural causes, can produce a volume of water of sufficient magnitude for their submersion. The increase of water therefore, to the point at which inundation commences, is not the work of an hour nor of a day—it is not like the hasty rising of a brook, nor the rush of a mountain torrent—but the powerful swelling of

a great stream, increasing with gradual and majestic progression, and affording to man and brute, due notice of its approach. In so large a volume of water, it will also be readily understood that the force of the current will be near its centre, the portion that rolls in contact with the banks will have a retarded motion, while that which overflows the flat lands, will be stagnant, or flow gently backward in eddies. Such in fact is the invariable operation of these great causes; and although domestic animals which linger on the higher spots of the shore until the surrounding lands are immersed, and their retreat is cut of, are sometimes drowned, and although fences are floated off, there is never, on any of the overflowed lands, a strength of current great enough to sweep away permanent dwellings, or to endanger the lives of men or cattle, where ordinary prudence is used.

As the waters rise, trade and navigation are quickened into activity. The largest vessels now float in safety; the steam boat of six hundred tons burthen, is as secure from the dangers of the river navigation as the lightest skiff; and it is a noble sight to behold these immense vessels, darting along with the current, with all the additional velocity which can be given by a powerful engine, or stemming with apparent ease the rolling torrent, whose immense bulk seems to give it a fearful energy, which no human means might attempt to overcome.

At this season the spectator who is stationed upon the shore,—perhaps at a spot where no human dwelling is within sight, and where the wilderness is untamed and unaltered,—sees these vessels passing in rapid succession, —not unfrequently several at the same time being visible —laden so heavily that the whole hull is immersed, and it would seem as if the least additional weight would sink them.

The flat bottomed boats are also numerous at this season. These are built along the shores of the river, but

more frequently on its tributary streams, and often on the smaller rivers and creeks, far inland, and at points beyond the reach of all ordinary navigation. Here they lie, with their cargoes, waiting until the annual rise of water shall afford them the means of proceeding upon their voyages; when they are floated off, with their immense freights, consisting chiefly of the heavier articles of the produce of the country.

The highest rise of water which has been known for many years, was the great flood of 1832, with regard to which our friend Dr. John Locke of Cincinnati, has been kind enough to furnish us with the following memoranda, of observations made by himself at that city, and which are rendered valuable, by the undoubted accuracy and skill of that gentleman in his philosophical investigations.

The section of the river opposite to Walnut street, Cincinnati, at low water, would be 1006 feet wide at the surface, and 7 feet deep, at the deepest place. The area would be 4774 square feet.

The rise of water which commenced early in February 1832, reached its greatest elevation on the 18th day of that month, when it was 63 feet perpendicular above the low water mark; and the sectional area became 91,464 square feet, without including its extension over the lower parts of Cincinnati and Covington. The number of cubic feet discharged per hour, was - 2,998,529,714
The number of cubic feet discharged per minute, was - - - - - - 48,308,828
The number of cubic feet discharged per second, was - - - - - 805,147

The velocity of the stream was ascertained to be $6\frac{1}{5}$ miles per hour.

Such a stream would fill a lake, presenting an area of one square mile, 107 feet deep, in one hour.

Having ascertained the quantity of water discharged, the next inquiry was in relation to the sources of the

flood. The first point to be examined was in reference to the area of the valley of the Ohio, and its waters, *above Cincinnati*, or in other words, the extent of the surface drained by the tributaries which are discharged into the Ohio, above our city.

	Square Miles
This valley includes about $\frac{2}{3}$ of Ohio, -	27,000
$\frac{1}{3}$ of Virginia,	27,000
$\frac{1}{5}$ of Kentucky,	7,000
$\frac{1}{7}$ of Pennsylvania,	14,500
of New York,	1,000
of Maryland,	500
of N. Carolina,	500
Total,	77,000

By calculation it appears that a depth of *four* inches only, over this immense space of *seventy seven thousand* square miles, was sufficient to maintain the river at the above uncommon height and velocity for *fourteen* days.

The winter of 1831–2 had been unusually severe, and the ground was frozen to a great depth, when there suddenly fell, according to the register of Dr. Hildreth of Marietta, eight inches of rain. Ordinarily, most of the water which falls to the earth, is absorbed by it; but in this instance the surface being completely sealed, the whole of the water which fell, was suddenly thrown into the channels of the rivers. This appears to be a probable and sufficient cause, for the inundation which destroyed so much property, and caused so much distress and alarm. If it be the true theory, it follows that no such flood can happen in the temperate months, nor at any season, except upon a conjunction of circumstances, so rarely occurring in combination, as to render its recurrence probable only at remote periods—perhaps not more frequently than once in a century.

A general law in relation to freshets in rivers, is, that the water attains its greatest elevation at a point nearly

midway in the length of the stream. The rule applies usually to each stream *proper*—each having its separate valley; and would be operative upon the Ohio, within the limits embraced by its name, beginning at Pittsburgh, and ending at its confluence with the Mississippi. The application of such a law, cannot however be very exact, as it will be modified by a variety of circumstances. It can only be assumed as a fact of usual occurrence, growing out of very obvious reasons, that, the causes which produce a freshet, act with powerful and rapidly aug menting force, to a point somewhere nearly midway of the course of the stream, from which point the counter acting causes begin to operate, and the volume becomes diminished in depth by the greater width of the channel, by absorption upon the overflowed grounds, by evaporation, and by other means. Assuming Cincinnati to be sufficiently near a central position, as regards the length of the Ohio, to satisfy this rule, we may suppose that the greatest periodical accumulation of water is at this point, and adopting the data afforded by the great rise in the spring of 1832, the height of *sixty three* feet may be safely given, as the maximum perpendicular increase above low water mark.

The mass of water occasioned by these causes, comes loaded with floating logs and drift wood,—not however in such quantities as to impede the navigation—and with alluvial soil, and silicious particles, swept from the shores; and as the waters which spread over the bottom lands, soon become nearly stationary, the earthy matter held in suspension settles down, and adds a rich coat to the soil, while the floating wood is left in the same position by the subsiding of the flood. Hence the annual accumulation of the alluvion lands; and the regular formation, in consequence of which the surface is always found to be most elevated, near the margin of the stream, where the first

and most abundant deposite is made, as the water flows outward over the banks.

In lower water the navigation of this river is impeded, in its upper portions by ledges of rock, and lower down, by snags and sandbars. These obstructions might undoubtedly be removed; and as there is scarcely any subject of so much importance, it seems to us that there has been a singular apathy in the public mind in relation to it. The Ohio and Mississippi rivers stretch from one end to the other, of this great valley, and extend their larger tributaries throughout its whole breadth. The Atlantic itself does not, within our empire, wash so extensive a line of coast, or bear the freights of commerce to so many ports. Thirteen states and territories, embracing half the members of the union, and a still larger proportion of its surface, lie in contact with these waters, and are directly interested in their navigation. It is therefore as much a matter of national concern. and as important to the American people, to improve the natural avenues of intercommunication afforded by those rivers, as the protection of our commerce on the ocean by a naval force, or the construction of harbors and light-houses for its convenience. The one is a *national* commerce, not because it embraces an intercourse with foreign countries, but on account of its general utility, and of the numbers who enjoy its benefits; and the other is equally national for the same reasons. Like the ocean too, this great thoroughfare is common to all. It is difficult to say which state is most interested in its trade and navigation, or where the line of demarkation would be drawn, which should separate the direct interest of one from another, or shew where one ended and the other commenced.

But these are precisely the kind of public improvements which have been, least of all, pressed upon the consideration of the general government. The western states, very properly, consider themselves entitled to a liberal share

of so much of the public treasure as may be set apart for such purposes; for all of them, in which the land is owned by the government, have made concessions which far exceed the donations received by them. The appropriations of the general government, in aid of internal improvements, have usually received their direction from calls made upon congress by the state legislatures; and the latter, influenced by selfishness, by personal considerations, and by that very natural species of patriotism which looks first at home, and *only* at home, have been in the habit of confining their recommendations, chiefly, to objects of public utility within their own boundaries. All of them have claimed assistance for their colleges, their common schools, their roads, or their canals: praiseworthy objects, upon which we care not how liberal, or how lavish, may be the expenditure of the federal treasure. But there has been an absence of that enlarged policy, which should have looked to results of wider and more permanent advantage to the whole west; and which should have brought the combined interest of the whole to act for the general good. Appropriations of money for purposes of limited or doubtful utility have been passed with difficulty through the legislative branches of the government, and have sometimes been arrested by the executive; for they must struggle against selfishness, opposing interests, constitutional scruples, and even political intrigue. But works like those under consideration, would be obnoxious to no objection, nor alarm any honest scruple; and a weight of influence might be arrayed in their favor, which would look down every shadow of opposition. If the whole west should unite in demanding from the national treasury an appropriation sufficient to complete all the labors requisite to the improvement of these rivers, no state, nor combination of states, could arrest the passage of a law which should provide for so noble an object—Pennsylvania and Virginia

being parties concerned, and New York having a direct interest and connexion with the west, which would conciliate her favor. Among ourselves, there could be but one opinion. There is not a farmer, a merchant, nor an owner of real estate, in the west—not a man who has interests in common with those of his country, who would not be directly benefitted, by such improvements as should make the Ohio and Mississippi rivers navigable throughout the year.

That such improvements are feasible, that they are within the scope of the means at the command of the nation, and strictly within the constitutional exercise of its power, are points, which we think will not now be disputed, by any reflecting mind. The rapids in the upper parts of these rivers, are composed of ledges of rock, or masses of loose stone, through which permanent channels may be made with facility. The snags, once so formidable, have been greatly diminished in number, and may be entirely removed.

The reader is probably aware, that *snags* are formed by the trunks of large trees, which are precipitated into the river by the crumbling of the banks. The base of the stem, with its mass of lateral roots, would by its own weight be sunk to the bottom, but it is rendered still heavier by the mass of clay which adheres to it. This part therefore, sinks—the top of the tree floats, and is thrown into the direction of the current—the roots bury themselves in the mud, and the subsequent deposites of sand or earth, fix the obstruction firmly in the channel. The smaller branches of the tree soon drop off, and the large limbs remain, pointing down the stream. When these sunken trees, are concealed beneath the surface, they are very dangerous to boats ascending the stream, which rushing upon them with the momentum given by a powerful steam engine, seldom fail, when they strike them, to have the hull of the vessel completely perforated.

This subject has already received some attention from Congress, and the results have been auspicious. Taking all that has been done together, little as it has been, we are not aware that any expenditure of public money has been more judicious.

In the year 1819 an examination of the whole bed of the Ohio was made by a board of commissioners appointed by the several states interested, whose report justified the hope that the navigation of this fine river was susceptible of great improvement.

Subsequent examinations have afforded more minute details, tending to strengthen the opinion then entertained. We copy the following just remarks, from a report made in 1835, by Lieutenant G. Dutton, of the United States corps of Engineers.

"The Ohio river derives from the Allegheny its principal and most lasting supply; during the summer months its volume is maintained, and very frequently increased, by occasional rains during that period, which enlarge materially the supplies drawn from the copious basin of this tributary, and it is only during a season of unusual drought, that it arrives at its minimum stage; this, from a comparison of the best authorities, is assumed at 15 inches. The least depth obtained during the examination this season was 2 min. 2 sec., although the water, for the brief space of a few days only, has been as low as two feet over some of the shoals between Pittsburgh and Wheeling. The Ohio through its whole course has in general a very equable and gentle current. During high stages this is the most uniform, although its rate is then considerably increased; at low stages the river becomes resolved into a succession of ripples, with extensive slack water basins between them varying in depth from two to three, and even five fathoms. The valley of the river is bounded on each side by richly timbered hills of great uniformity in their average height, enclosing

fertile bottoms which alternate in very regular succession on either side of the river; ledges of rock occasionally appear along its banks; these are generally of stratified and easily wrought sandstone.

"There are few points on the river deserving the name of gorges; the nearest approach to an opening of that character is found at Brown's island, 65 miles below Pittsburgh. The heights here approach within the distance of 600 yards, and ledges of rocks exhibit themselves on each side of the river. There are several other formidable passes on the river, which however, in comparison with the shoals are few in number; of the character alluded to are Captina and Buffington's islands, and the rapids called Le Tart's falls; these are more dangerous for the passage of keel and flat boats than for that of steamers, which under the management of careful pilots, are exposed to little risk, when there is found sufficient depth of water at those points for floatage. The obstructions in the river generally arise from want of sufficient depth of water, over many of the shoals at low stages. There are points however, where owing to the existence of projecting rocks, the navgiation is not safe for as much depth as is contained in the channel. The bars in the river may be classed, 1st, into those formed of hard and apparently of permanent gravel; 2nd, shifting or loose gravel; and 3rd, shifting sandbars. The first abound in the upper section of the river. These are generally exposed to a strong current, and formed of rounded oblong pebbles and stones, varying from one to fifty pounds and upwards; they become by the continued action of the water, cleared of all smaller particles, firmly imbedded, and by their conformation resist the action of the current, the bottom assuming the consistency of, or similarity with, a pavement of smooth stones.

"The bars of the second class are composed of fine gravel, moveable by strong currents, and occur, as well

as the sandbars at the lower junction of the chutes formed by the islands; these change their position, when upon the fall of the waters, the main channel of the river predominates in a new direction, and the fall and current increase by the subsidence of the lower basins. In the upper section of the river, the sandbars are always found under the lee of the islands, or at the meeting of the channels. In the lower are extensive sandbars unaccompanied by islands; the most important of these are met with between Guyandot and Cincinnati. In addition to the shoals, large quantities of logs and snags are distributed in different parts of the river. On some of the shoals, they lie imbedded in the gravel, forming dangerous obstructions to the low water navigation. Large trees with their roots, branches, and foliage, in full verdure, undermined and thrown into the stream by the gradual abrasion of the alluvial banks at high water, are of frequent occurrence. Many logs are disgorged from the smaller tributaries and creeks which empty into the Ohio. These creeks, when swelled by rains into rapid torrents, discharge large quantities of pebbles, and large angular stones, into the bed of the river; in many cases forming extensive bars at their junction.

"In descending the river from its head, a considerable improvement is experienced in the depth of water after reaching the foot of Wheeling island; from this point the river, at stages admitting the passage of light draught steamers, is practicable for about six inches greater draught than the section above it. This circumstance is not due to the reception of any important tributary to its waters, but solely to the decrease in the rapidity of its descent; this difference in the depth is less perceptible at an extreme low stage. From a comparison of the best data obtainable, the descent from Pittsburgh to Wheeling has been estimated approximatively, at one foot to the mile; from Wheeling to Guyandot, eight inches; and thence

to Louisville, four inches per mile. Below Guyandot, the character of the river becomes materially changed; it here enlarges its bed, and flows onward with a diminished current; the level reaches are longer, and the descent at the ripples less. This enlargement of its bed, however, renders the depth over some of the shoals in this part at the river, very slight at low water, forming several very shoal sand and gravel bars. From Cincinnati to Louisville, the navigation becomes comparatively much improved. There are two or three bars on this section, and some dangerous snags below the mouth of Kentucky river, which require attention. It would be desirable to give a specific description and sketch of each shoal, were it not that their great number and similarity would render such description a monotonous repetition of nearly the same circumstances.

"An important feature in the Ohio river is observable in the fact, that at all the islands are also located the worst shoals and rapids, or falls. These islands are considered rather the effect, than the cause of this fall, and formed, like the alluvial bottoms, by the gradual deposite from the river, which, at those points being spread out at low water, leaves some portions of the projecting parts of its bed uncovered. In respect to Captina and Buffington's islands, the low water channel at each deflects from the main direction of the bed, and passes off laterally, through a narrow and circuitous route, around the island. The main or direct channel, in both the cases alluded to, is rendered dangerous by rocks, and too shoal at low water for navigation.

"The rocks in the Ohio chute, at Captina island, appear, from recent examinations, to be of a detached character, and susceptible of removal. The direct channel at Buffington's island, is bounded by a ledge of stratified sand stone rock, projecting into the river, which is supposed to continue entirely across the channel, beneath the gravel

bottom; it is, however, situated nearly at the foot of the rapids. Some loose rocks are scattered in this channel.

"With regard to the islands, and particularly those at which the low water channel deviates from the direct continuation of the main bed of the river, shifting bars are always found under the lee of the islands. This rule appears, from the result of my examination, to be of general application in regard to all similar points on the river. The water, at high stages, passes with the greatest volume and current through the most direct and spacious channel, which then predominating, throws into the foot or junction of the smaller passage powerful eddies, depositing therein a bar, which again changes and deepens upon the fall of the waters. With regard to the rapids, called Letart's falls, the river here passes over a rocky bottom, with a descent and current far greater than is found at any other point above the falls; the bottom is free from dangerous projections, and the concentration of the water at this place, by the more prominent parts of the rocky bed on each side, renders the depth over these rapids much greater than upon most of the shoals in the river. The current, which is here five and three quarters miles per hour, at a moderate stage, can, in general, be stemmed by steamboats of sufficient power; but for keel boats, and the lighter class of steamers, permanent warping fixtures are here necessary. The points most requiring immediate attention, in the shoaler section of the river, lying between Pittsburgh and the junction of the Muskingum, at Marietta, are, Logtown bar, Black's and Brown's islands, Beech Bottom bar, McMahon's creek below Wheeling, which requires the removal of many dangerous rocks and logs, Captina island, Petticoat ripple in the long reach, Carpenter's bar, and Marietta island; at this latter point, the junction of the Ohio channel, opposite to the town of Marietta, is crossed by a large bar of loose shifting sand, which makes from the foot of the island

across to the mouth of the Muskingum. At the head of the island, three miles above, the Virginia channel is crossed by a shoal gravel bar.

"By the execution of that part of the plan of improvement now in progress, viz: the removal or clearing the channel of all sunken logs, stumps, snags, and projecting rocks, the navigation at low stages, and particularly for light draught steamers and keel boats, will be rendered much safer, and even practicable for a deeper draught, than it is under present circumstances considered prudent to employ. There are some sand and light gravel bars, which are among the very shoalest on the river, but which, notwithstanding, are not ranked among the most serious obstructions, from the comparative safety with which their passage may be attempted. A system of improvement, having for its object to secure a specific depth of water at all seasons, sufficient to meet the demands of the trade upon those streams which are rendered impassable during the dry seasons, from the diminution of the supplies derived from their tributaries, can be effected with certainty only by a series of dams and locks.

"As this mode is not, however, contemplated with regard to the Ohio, the concentration of the river into one channel, and the appropriation of all the water passing, to that object, during low stages, will, it is believed, accomplish all the further improvement contemplated."

The project of removing the snags and sunken timber from the beds of the Ohio and Mississippi, originated with Captain Henry M. Shreve, one of the earliest and most experienced navigators of steam boats on the western rivers. He contrived a steam boat, for this purpose, which operates with such speed and energy, that scores of the largest trees are raised in a day, with the assistance of a few hands. The business of removing snags is performed only when the water is low; at other times the crews of the boats are employed in cutting away the

overhanging timber from the *falling in banks*,—that is from such banks as are gradually becoming undermined by the action of the current, and which supply the greatest amount of these dangerous obstacles to navigation. The boat is of the most simple construction, yet has such power, that the largest tree, however firmly fixed, is removed in a few minutes. A number of these ingenious vessels have been employed for several years, under the direction of Captain Shreve, in the Ohio and Mississippi, and thousands of snags have been removed by them. In the year ending in September 1833, 1960 were taken up in the latter river, and supposing many to have been left, the chances of danger to ascending vessels, were diminished by at least that number. Within the same year, the crews of those boats were employed, when the water rose too high to admit of working on the bed of the river, in cutting away the trees which overhung the stream, or stood on banks liable to be undermined, and actually felled 10,000 trees, which must soon have been precipitated into the mighty current. The same operation has now been continued for several years, at an annual expenditure of less money, than was previously lost by the yearly destruction of property, from this single cause—to say nothing of the loss of life. It is true that the obstructions are continually renewed; but the number of trees which are thrown into the stream, must be annually decreased, by the settlement of the country, and the consumption of timber for fuel, by steam boats. Firewood has already become a valuable article; and but few years will elapse before every tree, on the margin of a navigable river, will have acquired a value sufficient to induce measures for converting into fuel, the whole of that immense mass, which would otherwise have been carried away by the spring floods.

The sandbars of the Ohio, present a more permanent and serious obstruction to navigation. These are numer-

ous—many of them extending entirely across the bed of the river, and affording less than two feet of water in any part. To cut a channel through a bank of sand, would not be impracticable; but the excavation thus effected would be filled by the deposites of the next flood. It is difficult to project a remedy for this evil, which shall be effectual and permanent. About ten years ago, Colonel Long of the topographical engineers, was instructed by the government to make an experiment, and adopted the plan of throwing out wing-dams from each side of the river, so as to confine the current within narrow bounds, and to give it sufficient volume to wash a channel for itself. He spent a summer in constructing such a work at Henderson bar, 200 miles below Louisville. The dams were constructed of piles driven into the sand and rising but a few inches above its surface. Captain Shreve has since pursued a similar plan in the construction of dams at French Island, Three Mile Island, Scuffletown bar, and the Three Sisters, which are among the shoalest and most difficult bars in the Ohio. The most extensive of these works, and that which, if successful, will most satisfactorily attest the correctness of the principle which applies to them all, is the one at Cumberland Island, near the mouth of Cumberland river. It is proposed to change the channel of the river, so as to force its waters to pass between the island and the Kentucky shore, by means of which a channel will be washed through the bar below, the mouth of the Cumberland relieved of a formidable obstruction, and the landing at the town of Smithland greatly improved. The length of the dam is about half a mile, its width at the base thirty feet, and its height sixteen feet. It is composed of large masses of limestone rock, quarried from the shores above. It was a costly work, and not well designed or constructed. A portion of it has been washed away and the dam in its present condition is an obstruction. Whether the work should be re-constructed, or removed, is a question we are not prepared to solve. We think it probable, however, that the Government will not hereafter entrust such works to any but scientific engineers.

Some diversity of opinion has been entertained, as to the advantages to be derived from these operations, in reference both to sandbars and snags; but the doubts are not greater, nor better founded, than those which have invariably assailed every novel and bold undertaking. It is obvious too, that many of them proceed from interested persons; the pilots decry every improvement in the navigation of the rivers, which by making it more safe and easy, has a tendency to render their own calling less important, and their services less valuable, while the owners and officers of insufficient and badly managed boats, are always ready to attribute those disasters, by which life and property have been wantonly endangered to any other cause than their own cupidity or criminal mismanagement.

The main objection to any of these measures, is that they have not been attempted on a scale of magnitude becoming their importance, and urged with all the energy which could be given by the resources of a great nation. The western plain is the centre of our empire, the citadel of its strength, the magazine of its resources, the *heart*, whose healthful operation must throw out nourishment and vigor to the whole continent,—and here should the nation lay deep and broad the foundations of its future greatness.

CHAPTER III.

The River Mississippi.

From the Ohio, we proceed naturally to that part of the Mississippi river, comprised within the region to which we confine our remarks.

In descending from St. Louis, the traveler is at once struck with the magnitude and boisterous character of the stream which has been so appropriately called, the Father

of waters. The current is powerful and impetuous. The water, loaded at all seasons with particles of white clay, carries upon its discolored surface, the evidence of the violence which it is continually committing upon its shores. The torrent itself, has always an angry appearance—boiling up or whirling round in eddies, and foaming, and lashing the shore, as it rushes along. On the Missouri side, a large portion of the country is high and broken, and the river often sweeps along the rocky bases of abrupt hills—behind which are the regions of lead and iron. Between these elevations are large tracts of alluvial bottom lands, which predominate on the Illinois side, whose shore presents an almost unbroken line of forest trees, extending their luxuriant foliage to the water's edge. The low, ragged, broken banks, are subject to continual change—accumulating at one point, while at another they are undermined, precipitating masses of earth and immense trees, into the headlong torrent, to be whirled in its eddies, or planted in its navigable channels.

Almost midway between St. Louis, and the mouth of the Ohio, masses of limestone rock are seen on either side, which, though now unconnected, have the appearance of having once formed a continuous ridge, crossing the general course of the river in an oblique direction. It has been suggested that a cataract, as mighty as that of Niagara, may once have existed at this spot. If such was ever the fact, the barrier has now been worn down to the general level of the channel of the river. But there is no reason to believe that such obstruction ever existed at this place, as the surface of the plain, on the Illinois side of the river, is such as to give a decisive negative to the supposition; for the river, if obstructed here, would have flowed over the low ground on that side, instead of being dammed up at this point. The stream thus confined, is narrower here than above or below, and in crossing the rocks, its course suddenly

changes to a direction nearly at right angles with that of the ridge.

Approaching from above, we first discover the ridge throwing out a bold promontory into the stream on the Illinois shore, on the extreme point of which, is a large rounded mass of rock, 50 or 60 feet in height, shaped like an oven, and thence termed the Devil's Bake-oven. A low neck of land connects this with a range of perpendicular rocks, which frown in rugged precipices over the stream, and whose summits are beautifully crowned with vegetation. As the current sweeps abruptly round this cape, another promontory is seen jutting out from the opposite shore. Against this the whole force of the current beats with fearful velocity, and by its attrition, has worn it away until a large fragment has been separated, and left standing in solitary grandeur in the midst of the waves. This is the Grand Tower. Its height may be 50 feet, and its diameter about the same. Its contour is remarkably exact and symmetrical, forming a column as nearly circular as if its proportions had been marked out by the hand of art. The sides are nearly perpendicular, but the different strata distinctly marked out. The whole has the appearance of a regular column, whose height is equal to its diameter. The top is flat, and supports a stratum of soil, which gives birth to a short, but rich growth, of trees and shrubs.

In our early history, this was a noted spot. The river boats, which before the application of steam, were propelled up the stream with difficulty, by human labor, were unable to ascend this rapid pass with oars or poles. Not only was the current too strong for this operation, but the danger of being dashed against the rocks, was imminent. The only way to surmount these obstacles was, to drag the boat round the cape on the Illinois side, by means of ropes. To effect this object, it was necessary for a portion of the crew to land, and an opportunity was

offered to the Indians to attack them, when the prospects of resistance or of flight, were equally hopeless. Here then they formed their ambuscades, and many a crew was slain at this spot, to gratify the savage lust for plunder and revenge, while many boats were wrecked by the violence of the waves.

These dangers exist now only in tradition. The Indians have retired, and our own industrious citizens inhabit these shores; while the introduction of steamboats has obviated the dangers of navigation, and rendered this spot as safe as any other. When we behold the steam vessel slowly and majestically overcoming the mighty current, riding along in perfect safety, and then turn our eyes to the surges which are beating against the rocks and sending up their sheets of white foam into the air, we cannot but acknowledge the deep debt of gratitude, which our country owes to the memory of Fulton. And when we behold this grand and durable tower, so graceful and so appropriate in its form, so appositely placed in the midst of scenes, calculated to awaken respect for the genius, and gratitude for the services, of Fulton, we are induced to hope that a monument, to the fame of this illustrious citizen will be erected upon this natural pedestal.

The *devil's tea table*, and other appurtenances of the dominion of his Satanic majesty, are found in this neighborhood. The *cornice rocks*, are great curiosities. The perpendicular sides of the limestone precipices, have been worn by the water into regular shapes, and in some places, a continuous formation resembling a handsome cornice work, may be seen, overhanging the cliffs, whose sides represent columns, and other architectural devices.

The *upper* Mississippi is a much more beautiful river than it is generally believed to be. In richness, beauty, and variety of landscape, it far surpasses the Ohio; and we cannot conceive why the French, who knew both, should have called the latter *la belle* in preference to

the former, unless, indeed, they considered that it would have been a solecism in language to have made a *belle* out of the Father of streams. For the first thirty miles above St. Louis, the country, although extremely rich and valuable, is not interesting in its appearance. Within that distance, the Missouri river comes in on the one hand, and the Illinois on the other; and after passing the latter, the shores become attractive.

The whole character of the river is changed, after passing the mouth of the Missouri. Above that, the Mississippi is a clear stream, with a strong, but smooth current. Instead of the low alluvial banks, which are continually accumulating at one spot, and falling in at another, as is the case upon the lower Mississippi, here are bold and beautiful shores, such as no other river that I have ever seen, can boast. On the Illinois side, we now behold a range of tall bluffs, rising perpendicularly from the water's edge, to the height of from one to two hundred feet, and faced with a solid bed of limestone.

In looking at these bluffs, the imagination readily suggests the idea, that the river has once flowed upon a level with their summits, and has cut its present channel, by the action of its current. This is doubtless in part true, in reference to this, as to all other rivers. But the appearances which cause this conjecture may be accounted for much more easily. The horizontal lines and projections, resembling long rows of cornice, which are noticed by the voyager far above his head, have doubtless been produced by the trickling of the rain water down the sides of the precipice. The strata being horizontal, and of different degrees of hardness, the particles have been removed most rapidly from the softer parts, and with a regularity corresponding with the formation of the rock. The escarpments or steep sides of the rock, exhibit no angular shapes, but are smoothed and rounded as if by the long continued action of a powerful current of water.

Numerous holes appear on the face of the solid rock, sometimes shallow and irregular, but often deep and cylindrical; they are precisely such as geologists call *pot-holes*, and are far above the present high water mark. Every projection is rounded, and every cavity is globular, and so regular has been this operation, as to have produced in some instances, a series of columnar formations, which display much of the symmetry of art, and extending from the base to the summit of the rock, seem like immense buttresses intended to strengthen and support these massive walls. The peaks seem to have been long since decomposed, and have mouldered down into gracefully rounded hills, covered with vegetation. These summits are on a level with the plane of the country.

After passing a few miles further, these vertical declivities are no longer presented to the eye. We now see the crystal stream beating against a bank of gravel, from which the shores rise with a gradual slope. In a few instances the hills rise boldly from the water's edge, or push out their steep promontories, so as to change the direction of the river; but more generally we see on either bank a series of graceful slopes, swelling and sinking as far as the eye can reach. The prairie, for the most part, extends to the water, and no pen can describe the singular and captivating effect of such scenery. Imagine a stream of a mile in width, whose waters are as transparent as those of the mountain spring, flowing over beds of rock or gravel. Fancy the prairie commencing at the water's edge—a natural meadow covered with grass and flowers, rising with a gentle slope, for miles, so that in the vast panorama, thousands of acres are exposed to the eye. The prospect is bounded by a range of low hills, which sometimes approach the river, and again recede, and whose summits, which are seen gently waving along the horizon, form the level of the adjacent country. The prairies are not flat, but composed of a succession of

swells, and the idea impressed upon the mind by the whole conformation of the surface is, that the level plane of the country once terminated on the brink of the river, that the channel of the latter has been for ages increasing in depth, and that the vales which we now see receding from it, were at first mere ravines, washed by the torrents of rain water, which have been gradually widened and rounded off by beating rains, into their present harmony of outline. The timber is scattered in groves and strips, the whole country being one vast illimitable prairie, ornamented by small collections of trees. Sometimes the woodland extends along the river for several miles continuously—sometimes it is seen stretching in a wide belt far off into the country, and marking the course of some tributary stream, and sometimes in vast groves, of several miles in extent, standing alone like islands, in this wilderness of grass and flowers. But more often we see the single tree without a companion near, or the little clump composed of a few dozen oaks or elms; and not unfrequently, hundreds of acres embellished with a kind of open woodland, and exhibiting the appearance of a splendid park, decorated with skill and care by the hand of taste. Here we behold the beautiful lawn enriched with flowers, and studded with trees, which are so dispersed about as not to intercept the prospect—standing singly, so as not to shade the ground, and occasionally collected in clusters, while now and then the shade deepens into the gloom of the forest, or opens into long vistas and spacious plains, destitute of tree or shrub.

We doubt whether there can be found, on the globe, a tract of country to compare with this. Commencing a little north of St. Louis, and extending two hundred miles from east to west, and the same distance north, is to be found the most extensive tract of rich land in the world. Within these bounds, the country is nearly all as captivating to the eye as that which we have described. Scarcely

any of the land is subject to inundation. On the contrary, although incalculably rich, and sufficiently level for cultivation, it is a high, rolling, champaign country, and the shores of the streams are mostly bold. Healthy it must be.

At the foot of the upper rapids is one of the most picturesque scenes that we recollect to have beheld. On the western side, a series of slopes are seen rising one above another for a considerable distance, until the back ground is terminated, by a chain of beautifully rounded hills, over the whole of which trees are thinly scattered. On the other side of the river, is a broad flat plain of rich alluvion, several miles in length, and more than a mile in breadth, and terminated by a range of wooded hills. On this prairie is a small village of the Sauk and Fox Indians, composed of rude lodges, scattered carelessly about. Their chief village was a few miles in the interior; and it was for the possession of this beautiful country, that the followers of Black Hawk contended, in the recent war which resulted in such disastrous consequences to that ill fated tribe. In the front of the landscape, and presenting its most prominent feature, is Rock Island; the western shore of which, is washed by the main current of the Mississippi, while the eastern side is separated from the main land by a narrow channel, which is fordable in low water. The southern point of the island is elevated about 40 feet above the ordinary level of the river, and is supported by a perpendicular parapet of rock. Here stands Fort Armstrong, a strong and very neat work, garrisoned by two companies of United States' troops; and here will be one of the most desirable sites for a town, upon the upper Mississippi. Rock river, which enters into the Mississippi a few miles below the island, is a rapid stream, which may be easily rendered navigable; and which affords abundant water power for the propulsion of any kind of machinery. The whole of this region is fruitful, healthy, and agreeable to the eye.

Here the wild honeysuckle flourishes luxuriantly; thousands of acres are covered with the wild gooseberry, plum, grape, mulberry, and other indigenous fruits, and the soil teems with the richest beauties and bounties of Providence.

Above this point the scenery becomes occasionally more hilly and diversified, but the same general character marks its features as far up as the falls of St. Anthony, and we shall only refer the reader to the volumes detailing the two expeditions of Colonel Long and his scientific companions, whose remarks, so far as we have trod over the same ground, we have found singularly accurate, and can recommend safely, to those who desire to make more minute researches, than those for which our own pages will furnish the materials.

CHAPTER IV.

General Surface of the Country.

The traveler who visits our Valley for the first time, advancing from the east, to the Ohio river, and thence proceeding westward, is struck with the magnificence of the vegetation which clothes the whole surface. The vast and gloomy grandeur of the forest, the gigantic size and venerable antiquity of the trees, the rankness of the weeds, the luxuriance and variety of the underbrush, the long vines that climb to the tops of the tallest branches, the parasites that hang in clusters from the boughs, the brilliancy of the foliage, and the exuberance of the fruit, all show a land teeming with vegetable life. The forest is seen in its majesty; the pomp and pride of the wilderness is here. Here is nature unspoiled, and silence undisturbed. A few years ago, this impression was more striking than at present; for now, farms, villages, and

even a few large towns are scattered over this region, diversifying its landscapes, and breaking in upon the characteristic wildness of its scenery. Still there are wide tracts remaining in a state of nature, and displaying all the savage luxuriance which first attracted the pioneer; and upon a general survey, its features present at this day, to one accustomed only to thickly populated countries, the same freshness of beauty, and the same immensity, though rudeness of outline, which we have always been accustomed to associate with the idea of a western landscape.

I know of nothing more splendid than a forest of the west, standing in its original integrity, adorned with the exuberant beauties of a powerful vegetation, and crowned with the honors of a venerable age. There is a grandeur in the immense size of the great trees—a richness of coloring in the foliage, superior to any thing that is known in corresponding latitudes—a wildness and an unbroken stillness that attests the absence of man—above all, there is a vastness, a boundless extent, an uninterrupted continuity of shade, which prevents the attention from being distracted, and allows the mind to fill itself, and the imagination to realize the actual presence, and true character, of that which had burst upon it like a vivid dream.

This effect is the more uniform since the rivers have become the great avenues of commerce, and the explorations of the majority of those who travel, are confined to their wooded shores. Here the forest is most abundant, and the growth of the tree the most gigantic; and as the steamboat paddles her way rapidly through the water, the spectator beholds, for mile after mile, a continuous border of unbroken woodland, alternating with the village, or the solitary farm, which is occasionally presented to his view. In no instance does the prairie,—the natural meadow, clothed with grass—appear upon the margin of the Ohio, or of any of its tributaries; but invariably the

rich alluvion lands that skirt those streams, and the low rounded hills, are shaded by a prolific growth of heavy timber.

But when the traveler forsakes the valley of the Ohio, and advancing westward, ascends to the level of that great plain, which constitutes the general surface of this extensive region, he finds himself in an open champaign country—in a wilderness of broad plains, covered with a rich sward of grass, and destitute of trees. The transition is as sudden, as it is complete. Behind him are the most gigantic productions of the forest—before him are the lowly, the verdant, the delicate, inhabitants of the lawn; behind him are gloom and chill, before him are sunlight and graceful beauty. He has passed the rocky cliff, and the savage mountain pass, where the den of the rattlesnake is concealed,—the marshes that send up fœtid steams of desolating miasma,—and the canebrake where the bear and the panther lurk; and has reached the pasture where the deer is feeding, and the prairie-flower displays its diversified hues. He has seen the wilderness in all its savage pomp, and gloomy grandeur, arrayed in the terrors of barbarian state; but now beholds it in its festal garb, reposing in peace, and surrounded by light, gayety, and beauty.

This distinction is not imaginary; no observing man can pass from one part of this region to another, without remarking the natural antithesis to which we allude; and that mind would be defective in its perceptions of the sublime and beautiful, which did not feel, as well as see, the effects of this singular contrast. There is in the appearance of one of our primitive forests, a gloomy wildness, that throws a cast of solemnity over the feelings, a something in the wide spread solitude which suggests to the traveler that he is far from the habitations of man—alone, in the companionship of his own thoughts, and the presence of his God. But the prairie landscape

awakens a different train of thought. Here light predominates instead of shade, and a variety of hue instead of a wearisome exuberance and monotony of verdure; while the extent of the open scene which is spread before the vision, allows the eye to roam abroad, over an endless diversity of agreeable objects.

The same remarkable contrast is equally striking in the contour of the surface—in the difference between the broken, and the level districts. The former lie chiefly along the Allegheny mountains, and are composed of the lateral ridges which extend from the principal chain into the valley; the latter is the common formation of a grea portion of this extensive country. If the traveler looks down from the western pinnacles of the Allegheny, he beholds a region beautifully diversified with hill and dale, and intersected by rapid streams, tumbling over ledges of rock, or beds of gravel. In western Pennsylvania, Virginia, Kentucky, and Tennessee, he finds every variety of scenic beauty—the hill, the valley, and the plain, the rocky cliff, the secluded dell, the clear fountain, and the rivulet pitching headlong from vale to vale.

The rivers have each their characteristic scenery. The Monongahela winding through a mountainous country, overhung with precipices, and shaded by heavy forests, with a current sufficiently gentle to be easily navigable by steam boats, has its peculiar features, which are instantly lost when the traveler has passed on to the bosom of the Ohio. The Allegheny differs from both; more turbulent than either, it has not the majesty of the one, nor the romantic beauty of the other. The winding course, and rugged scenery of the Ohio between Pittsburgh and Wheeling, impress the beholder as strikingly wild and picturesque; below the latter place the features of the landscape become softened, the hills recede farther from the river, are less lofty, and more rounded; and again, after passing Louisville, these elevations are seen less

frequently, and gradually melt away, until the river becomes margined by low shores, and a continuous line of unbroken forest. But if we leave the gentle current of the Ohio, and ascend the Kentucky or the Cumberland, we again find rapid streams, overhung with precipices, and a country abounding in the diversities of bold and romantic landscape. Here may be seen the rapid current foaming and eddying over beds of rock, and the tall peak towering above in solitary grandeur. Here the curious tourist may penetrate the gloom of the cavern, may clamber over precipices, or refresh himself from the crystal fountain bursting from the bosom of the rock. But he will find every hill clad with timber, every valley teeming with vegetation—even the crevices of the limestone parapets giving sustenance to trees and bushes. Green River, though lying between these is essentially different from both: though often hemmed in by hills, its current is gentle, and its navigable facilities extended far into the country through which it flows.

The Kenhawa river deserves a separate mention. From its junction with the Ohio at Point Pleasant, the field of a battle in which the characteristic valor of Virginia was most conspicuously displayed, the traveler ascends a valley of little width, through which meanders a small and gentle river. A narrow belt of rich bottom land, divided into highly productive farms, is seen on one or the other side of the river, and sometimes on both—beyond which is a range of high, precipitous, and rocky hills. At a distance of about sixty miles from the mouth, by the meanders of the river, commences the richest *salt region* in the United States. It extends about ten miles along the river; and within that distance there are eighty or ninety separate establishments for the manufacture of salt, thickly scattered along the shore on either side of the stream. A large portion of the salt used in the west, has been furnished from these furnaces, which have proved

extremely lucrative to the proprietors. Although they have been in operation for many years, the supply of brine remains undiminished, and the neighboring hills furnish an inexhaustible supply of bituminous coal, lying in thick horizontal *strata*, in sight of the furnaces, and in positions elevated a few feet above them.

Pursuing the river a few miles further, we arrive at a cataract formed by a ledge of rock which crosses its channel, and which forms a curious and beautiful scene. Immediately beyond this point, the landscape becomes grand and romantic, combining the wildest and most splendid features of scenic attraction. At the spot where the Gauley and New rivers unite, and merge their names, in that of the Kenhawa, we reach the foot of the mountains, down whose precipitous gorges these streams are seen rushing. The great road which pursues the valley of one of these tributaries, winding with its sinuosities, and for the most part hewed out of the sides of perpendicular parapets of rock, affords a series of the most extensive and sublime prospects. After toiling up an ascent of several miles, passing over deep ravines, and often turning the angle of a projecting cliff, along whose edge the traveler passes with an involuntary shudder, as he gazes on the perilous depth below, we arrive at the celebrated and magnificent spot called the Hawk's Nest. This is the highest peak of this part of the chain of mountains. It is not seen from the road, which at this point has left the steep side of the chasm, and passes for a short distance along a ridge shaded on either side by forest trees. The stage is stopped, in order that the natural curiosity of the traveler may be indulged in beholding a scene of uncommon grandeur. A small footpath leading at right angles is pointed out to him, pursuing which for a few yards, he suddenly finds himself standing on the projecting ledge of a precipice, from whose brink he may cast a stone into the New river, which foams over a bed of rock

one thousand feet below him. The landscape is perfect —its extent, its grandeur, its variety, its romantic character, and the splendid beauty of its details, are incomparably magnificent. The sublimity of the scene, is not less than that of the Niagara cataract; its gigantic outlines fill the beholder with wonder, while the dizzy height at which he stands, on a narrow ledge, projected over a gulph of such awful magnitude, causes a sensation of terror to mingle with the thrilling sensations of astonishment and delight that fill his bosom.

The toils and perils of a journey over the mountains are amply compensated by a view of this fine scene, to which nothing of the kind can be superior. It is on the road which leads from Guyandot on the Ohio, by the Virginia springs, to Fredericksburg in Virginia. The road itself is a clay turnpike, nearly impassable in the wet season, but in the summer superior to any other by which the Allegheny ridge is crossed, and which affords infinitely the most agreeable route for an excursion from east to west in hot weather.

The scenery presented on the western shore of the Ohio, is altogether different. The mountain is seen no more; the hill, the rock, the precipice, and the limpid torrent occur but seldom; and although in Ohio the change is not so marked, as in the more western states, the traveler as he wanders successively over Indiana, Illinois, Missouri, and the vast wilderness beyond, is astonished at the immensity of the great plain, the regularity of its surface, and the richness, the verdure, and the beauty, of its wide spread meadows.

Whatever may be the purpose with which we contemplate the region now under review, it is necessary to keep in mind this important diversity of surface and production. To the poet, it affords the most picturesque and striking contrasts of scenery; to the inquirer after truth, it presents in an imposing manner, the extraordinary capabili-

ties of a country, which embraces such varied resources for agriculture and trade, and possesses so happy an adaptation, to the different pursuits of life, and products of industry. To all it must suggest how defective and totally worthless are the accounts of those, who having visited one part of this country, assume to describe the whole; whose personal observations have been confined to the margins of the great rivers, while they have no knowledge of the prairies, nor can imagine in their wildest dreams, the extent, the fertility, the peculiar conformation, and singular agricultural advantages, of these interesting plains, and are equally unacquainted with the geology, the resources, and interior channels of intercourse, of this broad land.

There are some other distinctions which are necessarily to be considered, and to which reference should be had, whenever general remarks are made, for they will suggest the occasions where it may be necessary to make exceptions. In western Pennsylvania, and Virginia, the toils of the pioneer have in a great measure ceased, the log hut has disappeared, and commodious farm houses of framed wood, or stone, have been reared. Agriculture has assumed a permanent character, and is prosecuted with steadiness and method. In Pennsylvania, particularly, the immense treasures of iron and coal, and the great manufacturing ability of Pittsburgh, has given a peculiar character to the industry, and has caused the spirit of commerce and enterprise, to be widely diffused among the farmers. Great expenditures have been made upon roads and canals, and the traveler sees many symptoms of an active and prosperous traffic.

Ohio has grown more rapidly, and the new is here seen singularly mixed with the old—neat villages, extensive farms, and valuable improvements, alternating with rude hamlets, solitary log houses, or masses of unbroken forest. The appearances of commercial and agricultural

activity, are of the most cheering character, the actual improvement which is going forward in every department of life and business, is great,—yet the exterior development, as presented to the eye of the stranger, is new, rough, and uninviting. The beauty of nature has been destroyed, and the embellishments of art have not been supplied. Wealth and labor have been employed with great energy and success, in reducing the wild land into cultivated fields, in bringing the resources of the country into operation, and in providing the comforts of life; but few expenditures have been made for ornament or luxury. To him who passes rapidly through the land, and glances only at the rude exterior, every thing appears crude and unformed, but there is notwithstanding an admirable system in the industry, as well as in the social and moral condition of the people. The skeleton of a regularly organized civil society, with all its strong muscles and ligaments is vigorously developed, and those parts only are wanting, which are necessary to give grace and fullness to the outline.

Passing westwardly through Indiana, Illinois, and Missouri, there will be found still less appearance of improvement. In some parts of Indiana, the people are treading rapidly in the footsteps of those of Ohio, substantial houses have been built, and farms have been brought into a high state of culture. But generally speaking the settlers in these states continue to reside in their primitive dwellings; the log house, and the rough worm-fence, are the chief objects of human construction that meet the eye. The fields are rudely tilled, yet yield abundant harvests. There is an abundance, even to profusion, of all the necessaries of life, but none of the luxuries, and few of what would be called comforts, by those who are unaccustomed to the habits of the country. There is however a vast deal of substantial comfort, and the people are independent, cheerful, and intelligent.

The beauty that attracts the eye in this region, is that of nature, and is found in the wide tracts of wilderness that remain untouched by the axe or the plough. Such is the greater part of the country, over which the farms are thinly scattered, and where the cattle still roam at large through the woods and prairies, as in the days of the patriarchs. A large proportion of the people of these three states, partake more of the pastoral, than of the agricultural character. They belong to a race to whom wealth is not so desirable as to cause them to seek it by hard labor, and they aim at nothing beyond a competent support. Their numerous domestic animals, that feed in the natural pastures, and the game of the forest, supply them with food in rich abundance, and their fields are carelessly tilled, because the produce is of secondary importance.

But when we cross the Ohio, and pass through Kentucky, we find a different state of society, and a widely different aspect in the appearance of the country. In passing from Maysville to Lexington, the stage rolls over one of the finest Macadamised roads in the United States. The country is hilly, but moderately fertile, and well improved, until we reach the vicinity of Licking river. The agriculture is good, the houses well constructed, and comfortable. The forming stage of society is past, and much attention is paid to the refinements and courtesies of domestic life. On approaching Licking river a wild and sterile tract presents itself, extending for a few miles on either side of that stream. The hills are abrupt, broken, and rocky, the soil thin, and the vegetation stinted. The rocks are overgrown with moss and lichens, and instead of the tall timber of other localities, we find a straggling and dwarfish growth of low bushes. Nothing can be more dreary than this sombre landscape, or more strongly contrasted with the rich and cheerful districts that lie around in every direction. It is a mineral region, abounding in saline impregnations, and to this cause an

acute writer attributes the appearances which we have noticed. Dr. Yandell, of the Lexington Medical school, remarks: "At one time the hills, which, now bare, show as wasted skeletons, must have had a covering of clay and vegetable mould, for the country in every direction, at the distance of a few miles, is rich, and clothed in luxuriant vegetation. It is well known that the first adventurers to the west, found it abounding in every species of wild game. Deer, elks, and buffaloes, were met with in numbers altogether incalculable. These animals resorted in vast numbers to the springs, and the latter came from a distance, and lingered for weeks in the neighborhood. It is said that the roads which they made in journeying thither, are still visible at this distant day. And finally, the mastodon, and arctic elephant, we may infer from the osseous remains that have been exhumed, were among the ancient visitors at these watering places. The effect of such a concourse of animals sojourning for weeks together in the neighborhood, and feeding upon the shrubs, herbaceous plants, and such limbs of trees as were in their reach, bruising and lacerating their roots in passing to and fro, must have been in time, the destruction not only of the grass and more tender herbs, but of the forests themselves; and the soil thus deprived of its necessary support, would be ultimately washed by rains into the streams and valleys. This cause, of course has long ceased to operate, and with its cessation, a new change has commenced. The soil is again in a process of renewal, and the sides and summits of the hills begin to assume an appearance of verdure and life."

Having passed through this region of sterility, the road to Lexington winds through an open champaign country of the most delightful appearance. The heavy forest, which once threw its deep shade over the lurking Indian, has been cleared away, and highly cultivated fields adorn the whole of the wide landscape. The surface is not

broken by hills, nor is it level,—but of that beautifully rolling or undulating character, which is, above all others, the most pleasing to the eye, and the best adapted to the purposes of husbandry. Its similarity, in this respect, to the gracefully waving prairies in the central and nor thern parts of Illinois is very striking. The soil is of the richest kind, and the improvements not only substantial, but elegant. It is seldom that the eye of the traveler is delighted with so pleasing a combination of rural beauty and tasteful embellishment. The dwellings are commodious and comfortable; most of them are very superior to those usually inhabited by farmers, while many are the elegant mansions of the opulent and refined. These are surrounded by gardens and pleasure grounds, adorned with trees and shrubs, tastefully disposed. There is a something substantial, as well as elegant, in the residence of a farmer of this part of Kentucky; a combination of taste, neatness, comfort, and abundance, which is singularly interesting, and which evinces a high degree of liberality in the use of wealth, as well as great industry in its production. The fields are extensive and well cultivated. Not a spot remains in its pristine state of wilderness; but everywhere the hand of art is seen to have exerted its energies with an unusual vigor and felicity of execution. Every foot of ground has been adorned, or rendered productive. The woodland pastures which are peculiar to this section of country are remarkably beautiful, giving to its extensive farms an unusual degree of elegance, and to the whole character of the scenery an originality, which attracts the attention of the most casual observer, while it fills a genuine admirer of nature with the most pleasurable emotions. This agreeable effect is produced by a simple procedure. The woodlands are all inclosed; the underwood, and the useless trees are removed, while the valuable timber trees are left, standing sufficiently wide apart to admit the rays of the sun, and

the free circulation of the air, between them. The ground is then sown with grass, and extensive tracts, which would otherwise have been mere wilderness, are thus converted into spacious lawns, studded with noble trees. These are so numerous, and of such extent, as to form a prominent feature in the scenery, and it is hardly possible to imagine any thing more beautiful, than the alternations of woodland and meadow, with hemp and cornfields, and orchards, which the eye here meets in every direction. The dwelling houses are usually large edifices of brick or frame, surrounded by numerous offices, and embowered in shade trees, among which the locust, and the lombardy poplar, are most frequently seen. The fences and other improvements are excellent, and the grounds neatly kept. The whole appearance is that of a country possessing wealth, industry, and refinement—the residence of a hospitable people, who cherish the social virtues, and who bestow much care in surrounding themselves with the comforts and luxuries of domestic life.

This beautiful region comprises several counties, and includes a circuit of more than forty miles in diameter, of which Lexington is the centre; but there are several other counties lying round it, but little inferior in point of fertility, and marked by similar features of industry, improvement, and manners.

The traveler cannot but pause to contrast the appearance of this country, with that of the wilderness which existed here forty years ago. Within the memory of living witnesses, the soil which is now so finely embellished, and which supports a numerous and highly refined population, was covered with luxuriant forests and vast canebrakes, which afforded shelter to the roving Indian, and the prowling beast of prey. Here were the lodge of the Indian and the camp of the solitary hunter. Here the pioneer endured in his rude log cabin, all the precarious toils and sudden vicissitudes of the border life, laboriously

opening the rich soil to the action of the sun, felling one by one the gigantic trees, and resting by night, like the weary soldier, with his rifle by his side. And here are still seen the ruins of those primitive fortresses, which protected the emigrants and their families, from the tomahawk, when the savage warriors came in sufficient force to drive the hunter from his camp, and the settler from his newly cleared fields.

So rapid has been this change, and so complete the transformation, that it seems as if the pioneers who had expelled the Indian, and the beast of prey, had been in their turn supplanted by a more wealthy and refined race, who by the magic influence of gold, and the energy of a superior industry, had converted the face of the land from a desert to a paradise. But such was not the actual procedure. The wealthy farmers who now occupy the soil, the educated and accomplished individuals who compose the population, are, for the most part, the immediate descendants of the hardy men by whose courage the country was subdued, and by whose enterprise its resources were brought into operation.

This beautiful region extends to the borders of the Kentucky river, to the south of which we find a hilly region, interspersed with fertile valleys, and crossed by several rocky, elevated, and precipitous ridges. Much of the land in this district is poor; the population is thinly scattered, and many of the settlers are rough and illiterate, though independent and hospitable.

Thence proceeding to the south west we meet with the Barrens, an extensive tract of rolling land, some of which is said to be rich, though a large portion of it is certainly not of that description. It received its name from having been, when first visited by the whites, wholly destitute of timber, and covered with bushes, and from the belief entertained by those who then explored it, that it was not sufficiently fertile to produce trees. That opinion has,

however, been exploded by the fact, that since the settlement of the country timber has been rapidly produced; and many parts of it are now thickly set with flourishing young forests, where not a tree was to be seen forty years ago. In some places the timber has attained a size which renders it useful to the farmer for fuel and fencing, but in general, the young trees are not tall enough to shade the road, while they are sufficiently high to prevent the circulation of the air, and in consequence, the traveler who rides through this region in sultry weather, finds the heat insufferably oppressive. This tract is nearly level, and very dry. But few springs or running streams are found upon the surface; and its general resemblance to the prairies, of which we shall treat hereafter, sufficiently shews an identity of character and origin.

Beyond the Barrens, and throughout what is termed the Green river country, the lands are timbered, and in general fertile. Some of the counties are populous and well improved; but this part of the state having been settled at a comparatively recent period, exhibits for the most part, the indications peculiar to a newly settled country.

As our plan does not admit of great minuteness of detail, we shall not pursue these descriptions through the state of Tennessee. The variety of surface and scenery is even greater here than in Kentucky. A large proportion of the territory is occupied by mountains; while another part extending to the Mississippi partakes of the alluvial character which distinguishes the borders of that river.

In attempting to describe the remarkable features of the topography of the western country, our intention is to dwell chiefly on those which are the most peculiarly characteristic. We have passed hastily over those parts which differ in appearance and in quality, from the general surface, so greatly as to form exceptions, but which yet partake of some of the attributes of the whole;

and shall proceed to speak of that broad plain which comprises the great body of the lands of the west, and which in the vastness of its extent, in the uniformity of its out line, in the singularity of its conformation, and in the unbounded fertility of its soil, stands without a rival.

CHAPTER V.

The Prairies—their Appearance.

It is perhaps not easy to account for the intense curiosity and surprise, which have been universally excited by the existence of these plains; for they have been found in various parts of the world. The steppes of Asia, the pampas of South America, and the deserts of Africa, are alike destitute of timber. But they have existed from different causes; and while one has been found too arid and sterile to give birth to vegetation, and another snow-clad and inhospitable, others exist in temperate climates and exhibit the most amazing fertility of soil. These facts show that there are various causes inimical to the growth of trees, and that the forest is not necessarily the spontaneous product of the earth, and its natural covering, wherever its surface is left uncultivated by the hand of man. The vegetable kingdom embraces an infinite variety of plants, 'from the cedar of Lebanon to the hysop that groweth on the wall;' and the plan of nature, in which there is no miscalculation, has provided that there shall be a necessary concatenation of circumstances—a proper adaptation of soil, climate, moisture—of natural and secondary causes, to produce and to protect each: just as she has assigned the wilderness to the Indian, the rich pasture to the grazing herd, and the Alps to the mountain goat.

I apprehend that the intense astonishment, with which the American pioneers first beheld a prairie, and which *we all* feel in gazing over these singularly beautiful plains, is the result of association. The adventurers who preceded us, from the champaign districts of France, have left no record of any such surprise; on the contrary, they discovered in these flowery meadows something, that reminded them of home; and their sprightly imaginations at once suggested, that nothing was wanting but the vineyard, the peasant's cottage, and the stately chateau, to render the resemblance complete. But our immediate ancestors came from lands covered with wood, and in their minds the idea of a wilderness was indissolubly connected with that of a forest. They had settled in the woods upon the shores of the Atlantic; and there their ideas of a new country had been formed. As they proceeded to the west, they found the shadows of the heavy foliage deepening upon their path, and the luxuriant forest becoming at every step more stately and intense, confirming the impression, that as they receded from civilization, the woodland must continue to accumulate the gloom of its savage and silent grandeur around them—until suddenly the glories of the prairie burst upon their enraptured gaze, with its widely extended landscape, its verdure, its flowers, its picturesque groves, and all its exquisite variety of mellow shade and sunny light.

Had our English ancestors, on the other hand, first settled upon the plains of Missouri and Illinois, and the tide of emigration was now setting towards the forests of Ohio and Kentucky, climbing the rocky barriers of the Allegheny ridge, and pouring itself down upon the wooded shores of the Atlantic, the question would not be asked, how the western plains became denuded of timber, but by what miracle of Providence, a vast region had been clothed, with so much regularity, with the most splendid and gigantic productions of nature, and preserved through

whole centuries from the devastations of the frost and the fire, the hurricane and the flood. We have all remarked how simple and how rapid is the process of rearing the annual flower, or the more hardy varieties of grass, and with what ease a spot of ground may be covered with a carpet of verdure; and we know equally well how difficult it is to protect an orchard or a grove, and how numerous are the accidents which assail a tree. An expanse of natural meadow is not therefore so much an object of curiosity, as a continuous forest; the former coming rapidly to perfection, with but few enemies to assail it, the latter advancing slowly to maturity, surrounded by dangers. Hence there is, to my mind, no scene so imposing, none which awakens sensations of such admiration and solemnity, as the forest standing in its aboriginal integrity, and bearing the indisputable marks of antiquity—where we stand upon a soil composed of the vegetable mould, which can only have been produced by the undisturbed accumulation of ages, and behold around us the healthful and gigantic trees, whose immense shafts have been increasing in size for centuries, and which have stood during that whole time exposed to the lightning, the wind, and the frost, and to the depredations of the insect and the brute.

The scenery of the prairie country excites a different feeling. The novelty is striking, and never fails to cause an exclamation of surprise. The extent of the prospect is exhilarating. The outline of the landscape is sloping, and graceful. The verdure and the flowers are beautiful: and the absence of shade, and consequent appearance of a profusion of light, produces a gaiety which animates the beholder.

It is necessary to explain that these plains, although preserving a general level in respect to the whole country, are yet in themselves not *flat*, but exhibit a gracefully waving surface, swelling and sinking with an easy slope,

and a full rounded outline, equally avoiding the unmeaning horizontal surface, and the interruption of abrupt or angular elevations. It is that surface which, in the expressive language of the country, is called *rolling*, and which has been said to resemble the long heavy swell of the ocean, when its waves are subsiding to rest after the agitation of a storm.

It is to be remarked also, that the prairie is almost always elevated in the centre, so that in advancing into it from either side, you see before you only the plain, with its curved outline marked upon the sky, and forming the horizon, but on reaching the highest point, you look around upon the whole of the vast scene.

The attraction of the prairie consists in its extent, its carpet of verdure and flowers, its undulating surface, its groves, and the fringe of timber by which it is surrounded. Of all these, the latter is the most expressive feature—it is that which gives character to the landscape, which imparts the shape, and marks the boundary of the plain. If the prairie be small, its greatest beauty consists in the vicinity of the surrounding margin of woodland, which resembles the shore of a lake, indented with deep vistas like bays and inlets, and throwing out long points, like capes and headlands; while occasionally these points approach so close on either hand, that the traveler passes through a narrow avenue or strait, where the shadows of the woodland fall upon his path,—and then again emerges into another prairie. Where the plain is large, the forest outline is seen in the far perspective, like the dim shore when beheld at a distance from the ocean. The eye sometimes roams over the green meadow, without discovering a tree, a shrub, or any object in the immense expanse, but the wilderness of grass and flowers; while at another time, the prospect is enlivened by the groves, which are seen interspersed like islands, or the solitary tree, which stands alone in the blooming desert.

If it be in the spring of the year, and the young grass has just covered the ground with a carpet of delicate green, and especially if the sun is rising from behind a distant swell of the plain, and glittering upon the dew-drops, no scene can be more lovely to the eye. The deer is seen grazing quietly upon the plain; the bee is on the wing; the wolf, with his tail drooped, is sneaking away to his covert with the felon tread of one who is conscious that he has disturbed the peace of nature; and the grouse feeding in flocks, or in pairs, like the domestic fowl, cover the whole surface—the males strutting and erecting their plumage like the peacock, and uttering a long, loud, mournful note, something like the cooing of the dove, but resembling still more the sound produced by passing a rough finger boldly over the surface of a tambourine. The number of these birds is astonishing. The plain is covered with them in every direction; and when they have been driven from the ground by a deep snow, I have seen thousands—or more properly tens of thousands—thickly clustered in the tops of the trees surrounding the prairie. They do not retire as the country becomes settled, but continue to lurk in the tall grass around the newly made farms; and I have sometimes seen them mingled with the domestic fowls, at a short distance from the farmer's door. They will eat, and even thrive when confined in a coop, and may undoubtedly be domesticated.

When the eye roves off from the green plain, to the groves, or points of timber, these also are found to be at this season robed in the most attractive hues. The rich undergrowth is in full bloom. The red-bud, the dog-wood, the crab-apple, the wild plum, the cherry, the wild rose, are abundant in all the rich lands; and the grape vine, though its blossom is unseen, fills the air with fragrance. The variety of the wild fruit, and flowering shrubs, is so great, and such the profusion of the blossoms with which

they are bowed down, that the eye is regaled almost to satiety.

The gayety of the prairie, its embellishments, and the absence of the gloom and savage wildness of the forest, all contribute to dispel the feeling of lonesomeness, which usually creeps over the mind of the solitary traveler in the wilderness. Though he may not see a house, nor a human being, and is conscious that he is far from the habitations of men, he can scarcely divest himself of the idea that he is traveling through scenes embellished by the hand of art. The flowers, so fragile, so delicate, and so ornamental, seem to have been tastefully disposed to adorn the scene. The groves and clumps of trees appear to have been scattered over the lawn to beautify the landscape, and it is not easy to avoid that illusion of the fancy, which persuades the beholder, that such scenery has been created to gratify the refined taste of civilized man. Europeans are often reminded of the resemblance of this scenery to that of the extensive parks of noblemen, which they have been accustomed to admire, in the old world; the lawn, the avenue, the grove, the copse, which are there produced by art, are here prepared by nature; a splendid specimen of massy architecture, and the distant view of villages, are alone wanting to render the similitude complete.

In the summer, the prairie is covered with long coarse grass, which soon assumes a golden hue, and waves in the wind like a ripe harvest. Those who have not a personal knowledge of the subject, would be deceived by the accounts which are published of the height of the grass. It is seldom so tall as travelers have represented, nor does it attain its highest growth in the richest soil. In the low, wet prairies, where the substratum of clay lies near the surface, the centre or main stem of this grass, which bears the seed, acquires great thickness, and shoots up to the height of eight or nine feet, throwing out a few

long coarse leaves or blades, and the traveler often finds it higher than his head as he rides through it on horseback. The plants, although numerous and standing close together, appear to grow singly and unconnected, the whole force of the vegetative power expanding itself upward. But in the rich undulating prairies, the grass is finer, with less of stalk, and a greater profusion of leaves. The roots spread and interweave so as to form a compact even sod, and the blades expand into a close thick sward, which is seldom more than eighteen inches high, and often less, until late in the season, when the seed-bearing stem shoots up.

The first coat of grass is mingled with small flowers; the violet, the bloom of the strawberry, and others of the most minute and delicate texture. As the grass increases in size, these disappear, and others, taller and more gaudy, display their brilliant colors upon the green surface, and still later a larger and coarser succession rises with the rising tide of verdure. A fanciful writer asserts that the prevalent color of the prairie flowers is, in the spring a bluish purple, in midsummer red, and in the autumn yellow. This is one of the *notions* that people get, who study nature by the fireside. The truth is, that the whole of the surface of these beautiful plains, is clad throughout the season of verdure, with every imaginable variety of color, 'from grave to gay.' It is impossible to conceive a more infinite diversity, or a richer profusion of hues, or to detect any predominating tint, except the green, which forms the beautiful ground, and relieves the exquisite brilliancy of all the others. The only changes of color observed at the different seasons, arise from the circumstance, that in the spring the flowers are small and the colors delicate; as the heat becomes more ardent a hardier race appears, the flowers attain a greater size, and the hue deepens; and still later a succession of coarser plants rise above the tall grass, throwing out larger and gaudier

flowers. As the season advances from spring to midsummer, the individual flower becomes less beautiful when closely inspected, but the landscape, is far more variegated, rich, and glowing.

In the winter, the prairies present a gloomy and desolate scene. The fire has passed over them, and consumed every vegetable substance, leaving the soil bare, and the surface perfectly black. That gracefully waving outline, which was so attractive to the eye when clad in green, is now disrobed of all its ornaments; its fragrance, its notes of joy, and the graces of its landscape, have all vanished, and the bosom of the cold earth, scorched and discolored, is alone visible. The wind sighs mournfully over the black plain; but there is no object to be moved by its influence—not a tree to wave its long arms in the blast, nor a reed to bend its fragile stem—not a leaf, nor even a blade of grass to tremble in the breeze. There is nothing to be seen but the cold dead earth and the bare mound, which move not—and the traveler with a singular sensation, almost of awe, feels the blast rushing over him, while not an object visible to the eye, is seen to stir. Accustomed as the mind is to associate with the action of the wind its operation upon surrounding objects, and to see nature bowing and trembling, and the fragments of matter mounting upon the wind, as the storm passes, there is a novel effect produced on the mind of one who feels the current of air rolling heavily over him, while nothing moves around.

By those who have never seen this region, a very tolerable idea may be formed of the manner in which the prairie and forest alternate, and the proportions of each, by drawing a colored line of irregular breadth, along the edges of all the water courses laid down in the map. The border thus shaded, which would represent the woodland, would vary in width from one to five or six miles, and would sometimes extend to twelve. As the streams ap-

proach each other, these borders would approximate, or come into contact; and all the intermediate spaces, not thus colored would be prairie. It is true therefore, as a general rule, in relation to the states in which the prairies are situated, that wherever there is a considerable tract of surface, not intersected by water courses, it is level, and destitute of timber; but in the vicinity of springs and streams the country is clothed in forest.

Taking as an example the country lying between the Ohio and Mississippi rivers, it will be seen that in the point formed by their junction, the forest covers the whole ground, and that as these rivers diverge, the prairies begin to intervene. At first there is only an occasional meadow, small, and not very distinctly defined. Proceeding northward the timber is found to decrease, and the prairies to expand; yet the plains are still comparatively small, wholly unconnected with each other, and their outlines distinctly marked by the woodlands which surround and separate them. They are insulated and distinct tracts of meadow land, embosomed in the forest. Advancing further to the north, the prairie surface begins to predominate; the prairies now become large, and communicate with each other like a chain of lakes, by means of numerous avenues or vistas; still however, the traveler is surrounded by timber; his eye never loses sight of the deep green outline, throwing out its capes and headlands; though he sees no more those dense forests and large trees, whose deep shade almost appalled him in the more southern district.

Travelling onward in the same direction, the prairies continue to expand, until we find ourselves surrounded by one vast plain. In the country over which we have passed, the *forest* is interspersed with these interesting plains; *here* the *prairie* is studded with groves and copses, and the streams fringed with strips of woodland. The eye sometimes roves over an immense expanse

clothed with grass, discovering no other object on which to rest, and finding no limit to its vision but the distant horizon; while more frequently it wanders from grove to grove, and from one point of woodland to another, charmed and refreshed by an endless variety of scenic beauty.

This description applies chiefly to Illinois, from a careful inspection of which state we have drawn the picture; but its general outlines are true of Indiana and Missouri, and are applicable, to some extent, to Ohio and Michigan. But if our path lie still farther to the west, and conduct us to the wide tracts that extend from the waters of the Arkansas to those of the Missouri and Mississippi, we arrive at a region of boundless plains—boundless to the eye of the traveler, which discovers nothing but the verdant carpet and the blue sky, without a grove, a tree, or a bush, to add variety to the landscape, and where the naked meadow often commences at the very margins of the streams.

When the prairie is bare, it is easy to distinguish the rich from the poorer lands, by the small hillocks which are scattered over them, and which are most abundant where the soil is least productive. They are from a few inches, to two or three feet in height, and can only, of course, exist where the clay lies near the surface; as such mounds composed of the rich mould, would soon crumble away. They have a singular appearance, and are sometimes so thickly scattered as to be inconvenient to the horseman, who attempts to ride through the high grass. The inhabitants call them *gopher hills*, under the belief that they were raised by a small quadruped of that name. I never saw a gopher—nor a man who had seen one. Col. Long, however, and his companions saw them far to the west; so that while the existence of such an animal seems to be proved, it is obvious from the fact that it is no longer seen within our settlements, that like the Indian it cannot endure the vicinity of civilized man, and

has long since forsaken our borders. But I am inclined to believe that very few of the hillocks attributed to these animals are of their workmanship. In the wet prairies they are thrown up by *crawfish*, who always burrow in the clay, and not in rich or crumbling soil, that would *cave in* and mar their labor; in drier situations they have been thrown up by industrious colonies of ants, who also belong to the clay party, and make their internal improvements in the kind of earth best suited to their purpose

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CHAPTER VI.

Theory of the Prairies.

The prairies afford a subject of curious inquiry to every traveler who visits these regions. Their appearance is novel and imposing, and he who beholds it for the first time experiences a sensation similar to that which fills the imagination at the first sight of the ocean. The wide and unlimited prospect calls up perceptions of the sublime and beautiful; its peculiarity awakens a train of inquisitive thought. Upon the mind of an American especially, accustomed to see new land clothed with timber, and to associate the idea of a tangled and silent forest, with that of a wilderness, the appearance of sunny plains, and a diversified landscape, untenanted by man, and unimproved by art, is singular and striking. Perhaps if our imaginations were divested of the impressions created by memory, the subject would present less difficulty; and if we could reason abstractly, it might be as easy to account for the origin of a prairie, as for that of a forest.

It is natural to suppose that the first covering of the earth would be composed of such plants as arrive at ma-

turity in the shortest time. Annual plants would ripen, and scatter their seeds, many times, before trees and shrubs would acquire the power of reproducing their own species. In the mean time the propagation of the latter would be liable to be retarded by a variety of accidents—the frost would nip their tender stems in the winter—fire would consume, or the blast would shatter them—and the wild grazing animals would bite them off, or tread them under foot; while many of their seeds, particularly such as assume the form of nuts or fruit, would be devoured by animals. The grasses, which are propagated both by the root and by seed, are exempt from the operation of almost all these casualties. Providence has, with unerring wisdom, fitted every production of nature to sustain itself against the accidents to which it is most exposed, and has given to those plants which constitute the food of animals, a remarkable tenacity of life; so that although bitten off, and trodden, and even burned, they still retain the vital principle. That trees have a similar power of self protection, if we may so express it, is evident from their present existence in a state of nature. We only assume, that in the earliest state of being, the grasses would have the advantage, over plants less hardy, and of slower growth; and that when both are struggling together for the possession of the soil, the former would at first gain the ascendancy; although the latter, in consequence of their superior size and strength, would finally, if they should ever get possession of any portion of the soil, entirely overshadow and destroy their humble rivals.

We have no means of determining at what period the fires began to sweep over these plains, because we know not when they began to be inhabited. It is quite possible that they might have been occasionally fired by lightning previous to the introduction of that element by human agency. At all events, it is very evident that as soon as

fire began to be used in this country by its inhabitants, the annual burning of the prairie must have commenced.

One of the peculiarities of this climate is the dryness of its summers and autumns. A drought often commences in August, which, with the exception of a few showers towards the close of that month, continues, with little interruption, throughout the fall season. The autumnal months are almost invariably clear, warm, and dry. The immense mass of vegetation, with which this fertile soil loads itself during the summer, is suddenly withered, and the whole earth covered with combustible materials. This is especially true of the prairies, where the grass grows from two to ten feet high, and being entirely exposed to the action of the sun and wind, dries with great rapidity. A single spark of fire, falling any where upon these plains, at such a time, instantly kindles a blaze, that spreads on every side, and continues its destructive course as long as it finds fuel.

Travelers have described these fires as sweeping with a rapidity, which renders it hazardous even to fly before them; and our children's books and school geographies are embellished with plates, representing men, horses, and wild animals, retreating at full speed, and with every mark of terror, before the devouring element. These are exaggerations. If instances of this kind of danger have ever occurred, they have been rare. We have never witnessed, or heard of such a scene. There is not an authenticated case, on record, or in tradition, in which a man or an animal has been burned by these fires, unless he was drunk or wounded. The burning of several Indians mentioned by Lewis and Clarke, was probably the result of some unusual accident, which they did not think necessary to explain. The thick sward of the prairie presents a considerable mass of fuel, and offers a barrier to the progress of the flame, not easily surmounted. The fire advances slowly, and with power. The heat is in-

tense. The flames often extend across a wide prairie, and advance in a long line. No sight can be more sublime, than to behold at night, a stream of fire several miles in breadth, advancing across these plains, leaving behind it a black cloud of smoke, and throwing before it a vivid glare which lights up the whole landscape with the brilliancy of noonday. A roaring and cracking sound is heard like the rushing of a hurricane. The flame, which in general rises to the height of about twenty feet, is seen sinking, and darting upward in spires, precisely as the waves dash against each other, and as the spray flies up into the air; and the whole appearance is often that of a boiling and flaming sea, violently agitated. The progress of the fire is so slow, and the heat so great, that every combustible material in its course is consumed. The root of the prairie-grass alone, by some peculiar adaptation of nature, is spared; for of most other vegetables, not only is the stem destroyed, but the vital principle extinguished. Woe to the farmer, whose ripe corn fields extend into the prairie, and who has carelessly suffered the tall grass to grow in contact with his fences! The whole labor of the year is swept away in a few hours. But such accidents are comparatively unfrequent, as the preventive is simple, and easily applied. A narrow strip of bare ground prevents the fire from extending to the space beyond it. A beaten road, of the width of a single wagon track, arrests its progress. The treading of the domestic animals around the inclosures of the farmer affords often a sufficient protection, by destroying the fuel in their vicinity; and in other cases a few furrows are drawn round the field with the plough, or the wild grass is closely mowed down on the outside of the fence.

It will be readily seen, that as soon as those fires commenced, all the young timber within their range, must have been destroyed. The whole face of the country being spread out into vast plains, unbroken by hills, and but

little intersected by streams, or other obstacles which might obstruct the onward career of the devouring element, the fire kindled at different places, would sweep on unchecked, until it had passed over the whole region—with a few exceptions, of which we shall now speak.

In the bottom lands, and along the margins of streams, the grass and herbage remains green until late in the autumn, in consequence of the moisture of the soil. Here the fire would stop, for want of fuel; the shrubs would thus escape from year to year, and the outer bark acquire sufficient hardness to protect the inner and more vital parts. The margins of the streams having thus become fringed with thickets, the latter, by shading the ground, would destroy the grass, and prevent the moisture of the soil from being rapidly evaporated; so that even the fallen leaves would not become dried so thoroughly, or so early in the season, as the grass of the open plains, and the fire would always afterwards find here comparatively little fuel. These thickets grow up into strips of forests, which continue to extend until they reach the high table land of the prairie; and so invariably exact is this process, that we see the timber now, not only covering all the bottom lands, and hillsides skirting the streams, but wherever a ravine or hollow extends from the low grounds up into the prairie, these are filled with young timber of more recent growth. But the moment we reach the level plain of the country, we see the evidences of a continued struggle between the forest and the prairie: at one place, where the fire has, on some occasion, burned with greater fierceness than usual, it has successfully assailed the edges of the forest, and made deep inroads, and at another, the forest has pushed long capes or points into the prairie.

Having thus stated briefly the theory which seems to us to be consistent with reason, and adduced as many facts as appear necessary to its support, we shall for the

present, to avoid repetition, omit some striking proofs which will be necessarily alluded to hereafter, and proceed to exhibit some of the hypotheses advanced by others.

The flood has, of course, been cited as the grand cause of the formation of the prairies—for what phenomenon in the geological or the topographical aspect of the earth, has not been referred to some one of the great concatenation of events which attended that extraordinary exertion of omnipotence! But we do not venture to go back so far. We are satisfied with having found a sufficient explanation within a more recent period. That the great plain of the west may have been formed by the deposition of earthy particles which took place upon the subsiding of the waters, after that wonderful catastrophe, is very probable; though we doubt whether much light will ever be shed upon the subject, or whether it be practicable to ascertain any thing further in relation to that awful event, than the sacred historian has deemed it proper to disclose. It has however little to do with the growth of timber at one location, or the absence of that production at another

A writer in the American Quarterly Review, for whose judgment we entertain the most perfect respect, has suggested an explanation somewhat different from that which we have advanced. He says, "The origin of these prairies has occasioned much theory; it is to our minds very simple; they are caused by the Indian custom of annually burning the leaves and grass in autumn, which prevents the growth of any young trees. Time will thus form prairies; for some of the old trees annually perishing, and there being no undergrowth to supply their place, they become thinner every year; and as they diminish they shade the grass less, which therefore grows more luxuriantly, and when a strong wind carries a fire through the dried grass and leaves which cover the earth with combustible matter several feet deep, the volume of flame destroys all before it; the very animals cannot escape.

We have seen it enwrap a forest upon which it was precipitated, and destroy whole acres of trees. After a beginning is made, the circle widens every year, until prairies open as boundless as the ocean. Young growth follows the American settlement, since the settler keeps off those annual burnings. Another proof of our theory is, that prairies are all upon rich, rolling, and comparatively dry, soil, where much vegetable matter would accumulate to raise the flame, and but little moisture to counteract it."

This writer differs from us, in supposing that the forest has been destroyed by the action of fire, while we imagine that its production has been prevented by that cause. We deny that there is any proof of fires in the woods having been so extensive, or so destructive as he supposes. The destruction of growing timber by fire is not a common occurrence, though we do not question that the writer has witnessed it under the circumstances which he states. The fact is undeniable, that in those countries where woodland and prairie are found adjacent, the fire ceases to display the same destructive energy in the former, that it exhibits in the latter. The edges of the prairie do not exhibit appearances of encroachment by fire on the timber; on the contrary the woodland seems to be increasing, and it is much more common to see young thickets spreading out from the woods upon the plain, than to behold the stumps and trunks of trees which had been killed by fire. But a conclusive argument is, that the destruction of the forest by fire, for which the writer contends, would have taken place on the hills, and on broken grounds, as well as on the level, while the prairie only occupies the latter.

In the very interesting narrative of Long's First Expedition to the west, we find a statement similar to that which we have quoted, though advanced with less confidence. "The lands immediately in the rear of St. Louis,

between the Mississippi and the Missouri, below their junction, have an undulated surface, and a deep alluvial soil. Since their occupation by permanent inhabitants, the yearly ravages of the fire have been prevented, and a dense growth of oaks and elms has sprung up."

"In this fact we have a satisfactory explanation of the cause of the present want of forest trees in extensive tracts on the Missouri, which appear, in every respect, adapted to the growth of timber. *If these lands*, called prairies, *were at any former period covered with forests*, it may easily be supposed, the yearly devastations of fires breaking out in dry seasons, would destroy many of the trees. The forests being thus broken, the growth of grass and annual plants would be greatly facilitated by the nakedness of the soil, and the free admission of the rays of the sun. Forests attract rain, and impede evaporation, while the reverberation from the surface of vast plains and deserts, tends to dissipate the clouds and vapors which are driven over them by the winds. In fertile districts like the alluvial lands of the Missouri and Mississippi, a heavy annual growth of herbaceous plants is produced, which, after the autumnal frosts, becomes dry and peculiarly adapted to facilitate and extend the ravages of fire. In a country occupied by hunters, who are kindling their camp fires in every part of the forest, and who often like the Mongalls in the grassy deserts of Asia, set fire to the plains, in order to attract herbivorous animals, by the growth of tender and nutritious herbage which springs up soon after the burning, it is easy to see these annual conflagrations could not fail to happen."

"In the Autumn of 1819 the burnings, owing to the unusual drought, continued until very late in the season, so that the weeds in the low grounds were consumed, to the manifest injury of the forests. Large bodies of timber are so frequently destroyed in this way, that the ap-

pearance has become familiar to hunters and travelers, and has received the name of *deadening*."

To this statement, taken altogether, we have no objection, as it does not differ materially from our own views. *If* the plains,—as the author cautiously suggests, were at any former period covered with forest, there is no other agent than fire, by means of which they could have become denuded. And the admission, in the latter part of the quotation, that an *unusual* drought, continuing late in the season, is necessary to carry the fire into the low grounds, and render it injurious to the forests, is all that we could ask, to shew that these are exceptions, whose occasional occurrence could not produce an effect so invariable, as the non-existence of timber on the plains of the west.

Major Stoddard, in his Sketches of Louisiana, holds the following language: "The prairies are covered with grass. These were probably occasioned by the ravages of fire; because whenever copses of trees are found on them, the ground about them is low, and too moist to admit the fire to pass over it."

An opinion differing from all these is expressed by the enterprising traveler, Pike, who in speaking of the prairies attributes their destitution of timber, to a deficiency of moisture in the soil and climate. "I therefore consider,' says he, "that this country never was timbered, as from the earliest ages, the aridity of the soil, having so few water courses running through it, and they being principally dry in summer, has never afforded moisture sufficient to support the growth of timber." This argument might apply, with sufficient plausibility, to the deserts of Arabia, and to the sand plains lying east of the Rocky mountains, where there is not enough of moisture to afford nourishment to *any* vegetation; but the character of our prairies is not that of barrenness. The plain of the Mississippi is dry, but not *so arid* as to be incapable of supporting vegetable life. The luxuriance of the wild growth,

and the admirable adaptation of the soil to the purposes of husbandry, afford conclusive evidence that although the surface be parched, there is some process by which nature affords an ample supply of moisture: and this is probably by the ascension of water by capillary attraction, through the porous substrata, from the subterranean currents, which are known to be abundant, and to lie near the surface. General Pike wrote before any part of the prairie region was settled by the American people, when but little of it had been explored, and when the facts to which we have alluded in support of our views, had not been ascertained.

It has been suggested that the prairies were caused by hurricanes, which had blown down the timber, and left it in a condition to be consumed by fire, after it was dried by lying on the ground. A single glance at the immense region in which the prairie surface predominates, must refute this idea. Hurricanes are quite limited in their sphere of action. Although they sometimes extend for many miles in length, their track is always narrow, and often but a few hundred yards in breadth. And it is a well known fact, that wherever the timber has been thus prostrated, a dense and tangled thicket shoots up immediately, and protected by the fallen trees, grows with uncommon vigor.

Some have imagined that our prairies have been lakes; but this hypothesis is not tenable. If the whole state of Illinois is imagined to have been one lake, it ought to be shewn that it has a general concavity of surface. But so far from this being true, the contrary is the fact: the highest parts of the state are in its centre. If we suppose, as some assert, that each prairie was once a lake, we are met by the same objection; as a general rule, the prairies are highest in the middle, and have a gradual declivity towards the sides; and when we reach the timber, instead of finding banks corresponding with the shores of a lake,

we almost invariably discover valleys, ravines, and water courses, considerably depressed below the general level of the plain. Nor does the circumstance of ponds being found in the middle of prairies, disprove the assertion that they are convex, and highest in the centre, as is suggested by one of our writers, any more than depressions on the surface of the globe, prove that it is not round. There cannot be the least ground for a doubt, that, as a general rule, the prairie surface is slightly, but decidedly, convex.

Wherever hills are found rising above the common plane of the country, they are clothed with timber; and the same fact is true of all broken lands. This affords additional evidence in support of our theory. Most of the land in such situations is poor; the grass would be short, and if it burned at all, would occasion but little heat. In some places the progress of the fire would be checked by rocks and ravines; and in no case would there be that accumulation of dry material which is found on the fertile plain, nor that broad unbroken surface, and free exposure, which are required to afford full scope to the devouring element.

There are other facts, too well known to admit of dispute, which strongly corroborate these views. It is undeniable, that from the first settlement of the western prairies, the timber has been rapidly increasing; and from the best information that we can get on the subject, it is pretty certain, that it spreads in a proportion at least equal to the increase of population. Although thousands of acres of woodland are annually cleared, it is unquestionably true, that the quantity of timber in the whole region in which prairies are embraced, is increasing with every year. Wherever a prairie, of but few miles in extent, is entirely surrounded by the farms which occupy the adjoining woodland, it is found that the wild grass is quickly succeeded by a growth of weeds, and that these in turn give place to bushes. The operation is simple.

We have already shown, that the growth of timber is only prevented by the annual fires; and it is easily seen that where a portion of the prairie is insulated, as above described, the precautions used by the farmers, to defend their own property from the devouring element, will also protect that portion of the prairie which is thus detached from the main body. The large herds of domestic cattle, also, which run at large in the new settlements, contribute to this process, by keeping down the luxuriance of the natural grass, so as to leave but little fuel for the fire, even in places exposed to its approach. It is therefore a common observation, that around all the farms, the prairie has given, or is giving way, to thickets. In the oldest counties, where settlements have existed for twenty or thirty years, forests of excellent timber are now shown, of several miles in extent, the whole of which has grown up within the memory of the inhabitants. So rapid, and so certain, is this process, that we may state the fact as undeniable, that wherever the soil is protected from the action of the fire, timber will grow spontaneously, which, in from sixteen to twenty years, will be fit to be used for fuel, fencing, and many other purposes.

An instance of the facility with which the soil, when protected from fire becomes covered with timber, occurred under the notice of the writer. An individual had enclosed a single field in the prairie, in which corn was cultivated for several years, when it was abandoned, and the rails which composed the fence carried away. In the mean while the corners of the fence, and a narrow strip on each side of it, having been protected from the fire on the one hand, and the plough on the other, grew up in bushes. After the field was deserted, this natural hedge remained for years, and still remains; having grown up into a row of tall trees, occupying the former line of the fence, while the interior of the square became

also covered with brushwood; and thus a grove has been formed which bids defiance to the fire.

It will be remembered that we have maintained that the earth was covered with grass, antecedently to the growth of trees. We admitted that on the margins of streams, upon mountains, and on broken grounds,—wherever, in short, the progress of the autumnal fires should be intercepted, either by the conformation, or the moisture, of the surface, timber would rapidly cover the ground, while at the same time we contended, that in the open plains grass would long continue to hold possession. We have given ample proof of the correctness of this theory, in reference to our western prairies; and we shall now show that it is probably true of other parts of the United States.

In the "Memoirs of the Historical Society of Pennsylvania," we find an article entitled "Sketches of the early history of Byberry in the county of Philadelphia, by Isaac Comly," a worthy member of the Society of Friends, and a descendant of the companions of Penn. Byberry township lies in the north east end of the county of Philadelphia, distant from the city between thirteen and sixteen miles. The account is compiled from the most authentic sources, and reaches back to the first settlement of the country. The writer says, "Byberry was settled early after the arrival of William Penn. When the white people first came here, we are informed they *found but few large trees* standing, though *plenty of saplings and underbrush;* and in some places, particularly in Mooreland, the ground was *covered with coarse grass*, as high as a man's head." This is a very striking passage. It seems, that there were prairies in Philadelphia county! and that *the ground was covered with coarse grass that grew as high as a man's head*, answering precisely to the description of the prairie grass of the West. Other spots were destitute of large trees, but produced "plenty of saplings and underbrush,"—being in the state intermediate

between prairie and forest, and thus affording the strongest proof of the change which the country had then recently undergone.

In another volume of the transactions of the same society, we have "An account of the first settlement of the townships of Buckingham and Solesbury, in Bucks county, Pennsylvania, by Dr. Joseph Watson,"—a gentleman who died some few years ago, at an advanced age, and whose own recollections, with the accounts transmitted to him by his father and grandfather, the latter of whom came out with William Penn, supplied him with the most authentic information. Speaking of the employments of the first settlers, he says, "they cut grass in the plains, or swamps, often at several miles from home, stacked it up on the spot, and hauled it home in the winter." The counties of Bucks and Philadelphia, lie adjoining, if we mistake not, and occupy an extensive undulating plain on the margin of the Delaware; and we think that the evidence of the two writers, who state the facts above quoted, incidentally, without any view to the support of a theory, sufficiently proves the former existence of prairies in that region; while their non-existence within the memory of the present inhabitants, shews also the rapidity with which, after settlements are made, timber will cover the interjacent plains.

The first settlers of Kentucky found large tracts of the country destitute of trees, and covered with bushes. Supposing that the want of timber was caused by the sterility of the soil, or some other circumstance unfriendly to vegetation, they gave to these spots, the expressive name of "the barrens," and carefully avoided them in making their selections of land. The *barrens*, were extensive plains, interspersed with hill and dale—not so level as the prairies, north and west of the Ohio, yet not broken by deep ravines, or abrupt ridges. It was soon discovered that the bushes were growing up into thrifty saplings;

and on farther examination the soil was found to be of good quality. The country was soon occupied, and now contains a large population; while forests of valuable timber are growing upon the soil, over which, within the memory of living witnesses, the hunter could see the deer bounding over the brush, as far as the eye could reach.

Trumbull in his "History of Connecticut," a work compiled with great care and labor, from the most authentic sources, speaks in various places of the practice of the early settlers, of cutting hay *from the wild meadows*: a phraseology which distinctly asserts the existence of plains, covered with grass, and destitute of timber. He also describes these natural meadows, and gives his own inferences as to their formation. He says,

"When the English became first acquainted with that tract, comprised within the settled part of Connecticut, it was a vast wilderness. There were no pleasant fields, nor gardens, no public roads, nor cleared plats. Except in places *where the timber had been destroyed, and its growth prevented by frequent fires*, the groves were thick and lofty. The Indians so often burned the country, to take deer and other wild game, that in many of the plain dry parts of it, there was but little small timber. Where the lands were thus burned, there grew bent grass, or, as some called it, thatch, two, three, and four feet high, according to the strength of the land. This, with other combustible matter which the fields and groves produced, when dry in the spring and fall, burned with violence and killed all the small trees. The large ones escaped, and generally grew to a notable height and magnitude. In this manner the natives so thinned the groves, that they were able to plant their corn and obtain a crop."

This statement is undoubtedly accurate so far as the author has related the facts which came down to him; while so much as is the result of his own attempt at explanation is fallacious. There were *plains*, which were

annually *burned*, on which *grass grew*, and where the Indians *raised corn*. But corn never grew under the shade of large trees of "notable" growth. Whatever might have been true of other places, the spots on which the grass grew four feet high, and where corn was cultivated, must have been entirely exposed to the action of the sun.

Captain Smith, on the contrary, found the whole of Virginia covered with timber, and is careful to record that he saw no plains, "but only where the Salvages inhabit, but all overgrown with trees and weeds, being a plaine wildernesse as God first made it."

Captain Owen, of the British navy, in a late voyage to the coast of Africa, of which an interesting account has been published, describes a large tract of the interior which he explored, as "a low level country, with some knots of trees, like park land;" and from other allusions in the same book, we suppose that he often met with extensive plains of wild meadow, precisely similar to those of Illinois and Missouri. The fact may pass for what it is worth. We adduce it for the purpose of shewing that there is nothing in the character of our prairies so anomalous, or so contrary to the laws of nature, as is supposed by those who have been accustomed to see wild lands clothed with timber.

CHAPTER VII.

Soil of the Prairies—Explanations in regard to the want of timber.

Fanciful writers have divided the prairies into *alluvial* and *rolling;* but no such distinction exists in point of fact, or is tenable according to any received theory, o scientific deduction. The formation of the whole is so invariable in character, as to render it certain, that if any part is alluvial, the whole is equally so, nor do those plains which are rolling, as nearly all are, differ in soil from the remainder, so as to justify this sort of classification. The probability is that the whole western plain is *diluvial*, with the exception only of the bottom lands on the margins of rivers, which are *alluvial*, and of recent formation.

The levelness of the surface, the absence of stones, the light quality of the loam, with other indications, seem to establish the fact, that this vast plain is composed of the sediment, deposited at the universal deluge. Marine shells have been found in our prairies; at one place particularly, an immense mass of oyster shells lie deposited not far below the surface. Logs have been discovered, buried thirty or forty feet deep. Boulders, or detached masses of stone, are occasionally seen on the prairies, lying loosely on the ground, not only entirely separate from the limestone pan beneath, but differing from it in kind. They are obviously not meteoric; and it seems that they have been wrenched from their native beds, and brought to the places where they are now seen, by some great convulsion of nature. They are granite, and there is no spot at which that description of rock exists, and from which they could have been brought, nearer than the Allegheny, or the Rocky mountains, or the northern shores of the lakes. Yet they are numerously scattered throughout Illinois and Missouri.

The great cause of the amazing fertility of the soil of new countries, is, the accumulation of decayed vegetable matter upon the surface. The leaves and grass, and other annual productions, which decay in the autumn, cover the ground every year with a new coat, of the most fertilizing quality. The boughs which are continually falling, the bark, of which most trees throw off a portion annually, and the trees themselves, which are torn up by tempests, or die of old age, form altogether an inexhaustible store, which continually rotting and adding to the soil, is as continually receiving and preparing new supplies. The plains as well as the woodland, are thus enriched. The annual burning of the prairies, may interfere to a considerable extent with this arrangement, but it does not defeat it; for although the fall of the leaf occurs emphatically and poetically in the autumn, it is not confined exclusively to that season. On the contrary, every vegetable is constantly throwing off a portion of its substance, and throughout the whole season of vegetation, the soil is daily gaining something, by deposit; even the ashes left by the autumnal fires, are not without their value. However thin the coat may be, which is spread over the earth in one year, and how trifling soever it may seem to us, yet, when we reflect that this process has been going on for ages, it is easy to see that the accumulation must, in the aggregate, be important. Nor can we in any other rational manner, explain the reason of the difference between new lands, and those which have been exhausted by cultivation. The one is continually losing by exposure to the sun and atmosphere, while its products are carried away by man; the contrary is true of the other, and the farmer who manures his land, only resorts to a simple operation of nature.

The decomposed vegetable matter, when completely rotted, forms a light black mould, which is the very richest and best manure in the world; and which, if used

simply as such, would be prized by the European farmer, above every other substance, which is usually applied to that purpose. A soil of unrivalled fertility is thus formed, extending throughout the whole country, but differing in depth, according to circumstances. The light particles, of which it is composed, are easily washed by rains, from the higher into the lower grounds. The valleys thus receive new supplies, in addition to that which their own vegetation affords, while the hills only retain the small portions which may be intercepted by the grass or fibrous roots, or by other accidental causes. On the low grounds, therefore, the stratum of mould has been found to be, in some instances, twelve feet deep; while on the hills, it is seldom more than a few inches. This process can, of course, only prevail in the hilly and timbered regions, to any extent; and it is thus that those rich bottoms are created, which margin all the streams, and those fertile valleys, which astonish every beholder with the rankness and beauty of the vegetation that covers them. A different operation obtains upon the prairie, whose level surface is not washed by rains. Here the accumulation is continual, though slow; all that is gained is kept; and the diluvian plain is covered with a rich vegetable mould, which is always increasing in depth.

It has been remarked, and there is no doubt of the fact, that the highest points of the prairie are invariably the richest; a circumstance which cannot be readily accounted for, unless we suppose that these lands are diluvial, and that those spots would be richest, at which the largest masses of diluvium were accumulated. It is easy to imagine the varieties which must occur, on these principles, between the extremes which we have suggested. The exceptions are numerous and depend chiefly on the quality of the subsoil; if too porous it absorbs the fertilizing juices; if impervious to water, it retains too large

a proportion of that element on the surface, and forms what are called wet prairies.

Having thrown out these hints, it is only necessary to add, briefly, that the soil is a rich black mould, containing an admixture of fine silicious sand. It is supposed to contain a portion of decomposed limestone, and is warm, quick, and lively. Its depth is as remarkable as its wonderful productiveness.

We pass now to some points of immediate practical importance to the agricultural population of our valley, which have not been understood abroad. When the eye of the experienced farmer, roves for the first time over the prairies of the west, he is struck with the dreariness of the prospect. That which is beautiful and picturesque to another, conveys no corresponding sensations to the mind of one who views it simply in relation to its capacity for the support of man, and the business of life. The absence of timber, seems to him an evil without remedy, and in his judgment millions of acres appear destined to bloom in eternal wilderness. So obvious is this view of the case, that we frequently hear the remark, from judicious men, that but for the want of timber, the advantages of Illinois and Missouri, as agricultural states, would stand unrivalled. An attentive examination of this question in all its bearings, will shew that this conclusion is fallacious, and that in fact, the supply of this indispensable article, is as abundant at this time, as its future increase in quantity is certain.

We have explained the manner in which the forest and prairie are interspersed throughout our country, and have shown that the former is found skirting the shores of all our rivers, and smaller water courses. Such are the situations, as regards locality, in which the first inhabitants always choose to settle, for the purpose of enjoying the united advantages of wood and water; and the vicinity of navigable streams holds out other strong inducements.

The open prairies, or those parts of the country which are now destitute of timber, being invariably the most distant from living streams, would of course, as a general rule, be the last to be settled, even if all the surface was alike covered with wood. Such has been the actual process of settlement. The margins of the large rivers were first settled, the inhabitants tenaciously adhering to the rich bottom lands, in spite of their dampness and insalubrity, and in defiance of the immense masses of heavy timber, which rendered the clearing of those lands a gigantic labor. More recently the prairie lands have acquired reputation, and the emigration has flowed towards the interior parts of the new states. But the settler, in forsaking the margins of the large rivers, pursues the meanders of the smaller streams, and selects his farm on the edge of a prairie, where he may enjoy the combined advantages of timber and plain.

For the present population, the quantity of timber is amply sufficient; and so small a portion of the timbered lands is yet occupied, as to justify the assertion that enough remains to supply all the inhabitants which these states may be reasonably expected to contain for the ne[illegible] half century. There are exceptions to these state[illegible] ser-instances in which settlements have spread o[illegible] entire prairie, and artificial means have been adopted for supplying the want of wood; but we shall show presently, that these cases go to prove the correctness of our views. We assume the positions, that at present the settlements are generally confined to the woodlands and adjoining prairies, where is found an abundant supply of timber; and that a very small proportion, in comparison to the whole of the timbered lands, is thus occupied. The remainder stands open to new settlers, while nature has made ample provision for future generations.

We have seen, moreover, that as the country becomes settled, the timber rapidly increases. We need not add

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to what we have said on this point. We think that we have shown conclusively that there have been numberless instances in this, and other parts of our continent, in which forests have grown up, within the memory of man, without the aid of any effort of human ingenuity; and we can imagine no reason why the same process should not continue to be carried forward. On the contrary, we have seen this munificent operation of nature proceeding regularly through a long series of years; and as we believe it to be the result of those immutable laws of nature, which pervade all ages and countries, we have no right to suppose that the future will not resemble the past. A careful examination of the subject must convince any rational mind, that there will always, during the whole process of the settlement of this wide region, be land enough reclaimed from prairie, and covered with timber, within each generation of inhabitants, to supply the increase of population which may have occurred during that time, until the whole country shall be thus supplied with a due proportion of wood.

But we are met here with another consideration, which is worthy of notice. The question arises, whether the race of farmers, now rising up in our country, will require timber in as large quantities as their predecessors. We reply that they certainly will not. Whenever an article is abundant, it will be used with profusion; when scarce, economy will be practiced in its consumption. American farmers have been accustomed to reside in the vicinity, or in the bosom of immense forests, and to enjoy the use of wood without stint. Not only has it been unnecessary to economise in this article; but every where in the United States, except latterly in a few districts, the *destruction* of timber has been a desirable object, and has constituted an unavoidable and laborious part of the business of the husbandman. Wood has therefore been used with prodigality, for all the purposes to which it is neces-

sarily applied; while it has also been substituted in numberless instances, for substances which, under other circumstances, would have been more suitable. Not to speak of wooden houses, bridges, and *roads*—of wood for fuel and fencing—we find it adopted in the west for purposes more anomalous, where wooden pins are substituted for nails, and wells are curbed with hollow logs, where the cabin door swinging on wooden hinges, is fastened with a wooden latch, and the smoke escapes through a wooden chimney. Engineers have proposed to substitute wood-work for masonry in the construction of railways and canal locks; and it is said that an eminent lawyer in Missouri, had a very convenient office, made of a single section sawed from a hollow sycamore. Well may ours be called a *wooden country;* not merely from the extent of its forests, but because in common use wood has been substituted for a number of the most necessary and common articles—such as stone, iron, and even leather. Whenever, therefore, timber shall cease to be cheaper than the substances which might be used in its place, the demand for it will be proportionably diminished.

There is still another view of this question, which is important. That which appears to the superficial observer as a defect, is, in truth, one of the greatest sources of the prosperity of our country. The labor of clearing woodland, is the most arduous task to which the western farmer is subjected, and has constituted in itself, the greatest drawback to the rapid growth of the new states. Where the soil is rich, the timber is generally heavy; and a lifetime is consumed in opening a farm. No one but a backwoodsman, accustomed to dwell in forests, to wield the axe, and to depend mainly upon his rifle for subsistence, is fitted for this herculean enterprise; when undertaken by the husbandman from the eastern states, it has scarcely ever failed to produce the most disastrous consequences: bankruptcy, disease, disappointment, and

death, have traced his footsteps, and poisoned his enjoyments. If the farmer is not sufficiently wealthy to hire laborers, a few acres only are annually reclaimed from the forest; and even this is effected by the most laborious and painful drudgery. Years are consumed, and the industrious settler, sees the prime of his manhood wasted, before he begins to reap the fruit of his labors. If the same operation is attempted to be performed by hired labor, the expense of clearing exceeds the value of the land when cleared; while the stumps of the trees remain for many years, occupying a large portion of the ground, and greatly impeding the business of husbandry. In the mean while, nothing is added to the industry or trade of the country, because those who are engaged in clearing lands can make no produce for market.

Nor is this all. The clearing of new lands, has always been found to be productive of diseases of the most malignant character. The settler builds his cabin in the gloom of dense shadows. The vegetable deposit of ages is suddenly exposed to the glaring beams of the sun. Thousands of trees are levelled—large portions of which are left to rot on the ground. The air is filled with noxious exhalations; and bilious fevers are the consequence.

Far different is the case in our open country. The settler may always select, upon our prairies, land as fertile as the richest river bottoms; and by settling in the edge of the timber, combine every advantage afforded by the latter. He finds the land already cleared, and has only to enclose it. The labor of bringing it into culture is comparatively trifling. A heavy plough and a strong team is required the first year, to turn over the sod. The corn is dropped in the furrows, and covered with a hoe, and no other labor is bestowed upon it until it is fit to gather; because during that year the crop cannot be tended in the ordinary way, as the sod, already bound together by the fibrous roots of the grass, is merely turned

over, and not pulverized so as to admit of tillage. But by turning the grass down, exposing the roots to the sun, and leaving the sod undisturbed, it becomes mellowed in one season, and while undergoing the process of decomposition affords nourishment to the growing corn. The crop thus raised is not abundant, nor the grain very good; but something like half the ordinary crop is raised, which amply pays for the labor of planting and gathering. By the ensuing spring, the roots of the wild grass, are found to be completely rotted, and the plough is put into a rich, light mould, fit for all the purposes of husbandry. The ordinary operations of farming may now be conducted in the usual way; and the labor of cultivating a light soil, unincumbered with rocks and stumps, is so trifling as to leave time for the farmer to improve his land and buildings. The plough runs on a level plain of rich mould, and may be managed by a half-grown boy, as well as by the strongest ploughman. In timber lands, newly cleared, ploughing requires both strength and skill; the plough must be sharpened frequently, and is often broken; and at last the work goes on slowly. The difference in the greater facility of working prairie lands; the saving in the wear of all implements of husbandry; the economy of time, and of course the greater degree of certainty in the farmer's calculations; the enjoyment of health—are so great, as in our opinion, to outweigh any inconvenience which can possibly be experienced in this country for the want of timber, even under the most unfavorable circumstances. A farmer had better settle in the midst of a prairie, and haul his fuel and rails *five miles*, than undertake to clear a farm in the forest. The farmers of Illinois are beginning to be aware of this fact; and there are now many instances in which farmers, having purchased a small piece of land for timber, in the woodland, make their farms at a distance in the prairie. It is only necessary to make a nice calculation of the time consumed in

the *transportation* of wood for fuel and all other purposes and to observe how small a proportion it bears to the other labors of a farm, in order to satisfy any one who is acquainted with the subject, that it is really a matter of no importance, when brought into competition with the advantages of a prairie country.

It is to be recollected, that the prodigal consumption of timber, which we now witness, will, in all probability, be diminishing annually, with the improvement of the country, and the introduction of a variety of substitutes for wood. People will not forever make worm fences, live in log cabins, and warm themselves by log-heaps built up in great wooden chimnies, which occupy nearly the whole gable end of a house. In an open champaigne country, it is not possible that the planting of hedges can be long delayed. If they can be used with advantage in any country, they certainly will succeed in ours. The climate is well adapted to the English white thorn; and we have several indigenous thorns which are admirably suited to the purpose. The conformation of the country, and its fertility, renders it easy to plant, to cultivate, to protect, and to perpetuate the hedge; and every circumstance combines to recommend this mode of enclosure. In the greater part of the prairie region, building stone cannot be had; but in such places, brick may always be substituted by those who wish to build good houses. The stratum of clay which is found under our soil, is well suited for brick-making, and in most places can be obtained, by removing the light covering of loam which forms the surface. As for fuel, there is no difficulty. No part of this country has been explored, in which coal does not abound; that is to say, there is no extensive district without it; it is found in the broken lands, and bluff banks of all our larger water courses, and though seldom met with within the area of a prairie, it abounds on the borders of all the streams which meander among these

plains. That it has not been brought into use, at all, is a proof of what we have asserted, viz. that wood is abundant. Whenever the farmer shall discover that his forest trees have become sufficiently valuable to be worth preserving, he will have recourse to those inexhaustible stores of fuel which Nature has treasured up in the bowels of the earth; his fields will be enclosed with hedges; the axe will cease its wanton devastation; the demand for timber, and the quantity, will regulate each other; and men will learn to believe the obvious truth, that there never need be a scarcity of that, which can be preserved by care, and produced by industry.

CHAPTER VIII.

The Prairies—their destitution of water explained.

In a practical point of view the absence of water is also a serious objection to the prairie region. No spring bursts out upon these plains. This is a truism; for wherever a stream, however small, trickles over the surface, the soil thus moistened becomes covered with timber. The prairie, therefore, is precisely that part of the whole country, which is destitute of living streams upon its surface. And when it is recollected that the greater part of Illinois, Missouri, and the territory lying north, west, and south of these states, is prairie, over which the eye of the traveler may rove for miles, without discovering a shrub or tree, it will be readily seen that the absence of water must be great.

It is true, that there is a dearth of water upon the surface. In the summer especially, the traveler may ride a whole day without finding a rivulet, or even a standing

pool at which he may water his horse; and those who traverse the unsettled parts of the country, complain of this as one of the greatest inconveniences of the journey. On the other hand, it is a fact equally well ascertained, that water is every where found, in great abundance, at a distance of a few feet below the surface. We have known but a very few spots at which water could not be procured by digging; there are few countries in which the sinking of wells is performed with so much ease, or with such uniform success. There is, in general, no rock to perforate; after removing the rich soil, a stratum of hard clay presents itself, then gravel, and then another layer of clay, all of which are so compact as to require no *curbing*, during the progress of the operation. The water is found in a stratum of fine clean sand. The depth of the wells varies from twelve to forty feet, but most usually is from eighteen to twenty-five; it very seldom varies much from twenty feet.

There is therefore, in fact, no dearth of water. It is present in great abundance, but not in the position most desirable to the farmer, who, if settled at a distance from the woodland, must adopt some artificial mode of supplying his stock, with this indispensable article. At present this want is not felt as an existing evil; and we think it will not become a subject of complaint for many years, for the same reason which we suggested in relation to timber. The present inhabitants of the prairie region, are settled in situations amply supplied with water, and there is still a great abundance of choice land remaining vacant, on the margins of the rivers and smaller water courses, to accommodate several generations of new settlers. It is worthy of remark also, that the practice of suffering cattle and other stock to roam at large over the natural pastures, which now prevails universally, and must long continue to be pursued, renders this rather an imaginary want, than one of practical inconvenience

The family is supplied, either by a spring or well, with a sufficient quantity of good water for household purposes, and for work-horses; while the animals which seek their own food on the wild lands, roam off to the streams which are more or less distant. But the open prairie lands possess some advantages, which will go far towards counterbalancing this deficiency. These, as we have remarked, are their great fertility, the case with which they may be brought into cultivation, and the lightness of the soil, which renders the tillage less laborious than that of other lands. To these may be added, the facility of making good roads, in consequence of the levelness of the country, and the dryness of the soil,—and the remarkable adaptation of this whole region for internal communication by railroads and canals.

A great mistake has been made by travelers, and adopted by the compilers of books, in reference to *wet prairies*, which they suppose to exist to a much greater extent than is true. Taking it for granted that the prairie region is a vast plain, they infer *prima facie*, that the water which falls from the clouds, is slowly drained off, and remains long on the ground, constituting extensive pools and marshes. But the truth is, that the surface is undulating, and that the process of draining has, in the lapse of ages, gradually worn down the edges of the plains nearest to the water-courses, so that the centre is in most cases the highest. This conformation is not invariable: there are prairies which are level, and upon others, even the most elevated, will be found depressions, from which the water is not drained. Taking into view these *exceptions* to the general rule, and considering them as characteristic features in the topography of the country, a writer, otherwise accurate, has said that "most of our large prairies are so nearly level, or slightly concave *in the centre*, as to render many places wet, and others inundated." A country of which this remark should be true would be

scarcely habitable. As well might the writer deny the convexity of the globe, because there are valleys upon its surface, as to deny the same general shape to the prairies, because in the almost imperceptible undulations of their outline, the latter sometimes assumes for a short distance the appearance of an exact plane, and sometimes sinks into a hollow. The idea is contrary to the analogy of nature, for the natural drainage of a country, will leave those parts most elevated which lie at the greatest distance from the rivers or valleys into which the rains flow off from the surface. In a region of rock formation, this effect will be modified by other causes; but on plains of light soil, resting on clay and gravel easily worn by the attrition of water, its operation is obvious and uniform.

In the spring of the year, or at any other season when rain has fallen copiously, the light and porous soil of the prairie becomes saturated with water, and as the process of draining cannot be carried forward rapidly, in a country so *nearly* level, the whole land seems almost inundated. The slope of the entire plain of the west, has been shown to be gentle; the channels of its rivers have but little declination, and carry off their waters slowly. The smaller water courses, by the same law, have but little fall; they are therefore soon filled to overflowing. Creeks assume the appearance of rivers—brooks are filled to their brinks—the ravines in the prairies, dry at other seasons, become the channels of immense floods, which slowly flow off with an almost imperceptible motion. The whole land is like a saturated sponge. But whenever the waters subside, the porousness of the soil, and the rapidity of the evaporation in so open a country, produce the effect of drying the soil with remarkable celerity.

The objection to the prairie region, is not excess of moisture either in the soil or climate; the opposite, if it be an objection, is that which might be alledged with more propriety. It is a country of boundless plains, ac

cessible to the winds from every direction—but little shaded by timber—and having a small proportion of springs or running streams of water. Early in the summer all the streams except the largest, are dried up; the traveler is astonished as he passes over deep channels, perfectly dry, to see, by the marks of water above his head, that immense floods have recently filled them to overflowing, and at finding in the beds of rivers of sounding name, in which for months together a ship of the line might float, rivulets almost exhausted, over which he could jump at a single bound.

Wet prairies occur where the surface of the plain is perfectly level, or slightly concave. A very small proportion of the whole country is comprised within this description; and all of it may be easily drained. We have scarcely ever seen a prairie from which the standing water might not be conveyed by a ditch a few feet in depth. They are not sufficiently extensive to produce any effect upon the atmosphere; and as the waters are rapidly evaporated, they become dry in the early part of the summer, and are covered like the other lands with grass; so that they do not generate miasma in any quantity which can perceptibly effect the salubrity of the air.

The quality of the water in the interior, or prairie region, is often made a subject of complaint by travelers. The reason is obvious. The first settlers in a new country, and those who keep the houses of entertainment at which travelers stop, are persons who care little for the luxuries of life, and who have been accustomed to the use of spring water. They know little, and care less, about the art of procuring the pure element by means of artificial wells. When obliged to resort to this method of getting water, they consider it a matter of importance to find it as near the surface as possible, or rather, if they do not find it after digging a few feet, they desist and seek it at another spot; and choice of a place at which to reside,

depends on the finding of water at the depth of twelve or fifteen feet. The well is often so shallow that the water may be warmed by the action of the sun. It is curbed with green wood, from which sometimes the bark is not removed—or more frequently with a hollow log termed a *gum*—which is constantly decaying and imparting a bad taste to the water; while no pains are taken to remove the leaves and woody fibre which are continually falling into it. When wells are properly dug, and walled with stone or brick, the water is generally pure and excellent; nor can we conceive how it could be otherwise, passing, as it almost invariably does, through a stratum of fine clean sand.

CHAPTER IX.

Wild Animals.

There are several works on natural history, which accurately describe the animals of this region. In ornithology especially, the labors of Wilson, Nuttal, and Buonaparte, have left no room for additional remarks. We shall confine ourselves to a few desultory hints relating to the settled parts of the country.

The buffalo has entirely left the inhabited districts. Before the country was settled our immense prairies afforded pasturage to large herds of this animal; and the traces of them are still remaining, in the "buffalo paths" which are to be seen in several parts of the new states. These are well beaten tracts, leading generally from the prairies in the interior, to the margins of the large rivers; shewing the course of their migrations as they changed their pastures periodically, from the low marshy alluvion, to the dry upland plains. In the heat of summer they

would be driven from the latter by prairie flies, in the autumn they would be expelled from the former by the musquitoes; in the spring the grass of the plains would afford abundant pasturage, while the herds could enjoy the warmth of the sun, and snuff the breeze that sweeps so freely over them; in the winter the rich cane of the river banks, which is an evergreen, would furnish food, while the low grounds thickly covered with brush and forest, would afford protection from the bleak winds. I know few subjects more interesting than migration of wild animals, connecting as it does the singular displays of brute instinct, with a wonderful exhibition of the various supplies which nature has provided for the support of animal life, under an endless variety of circumstances. These paths are narrow, and remarkably direct, shewing that the animals traveled in single file through the woods, and pursued the most direct course to their places of destination.

Deer are more abundant in some places than at the first settlement of the country. They increase, to a certain extent, with the population. The reason of this appears to be, that they find protection in the neighborhood of man, from the beasts of prey that assail them in the wilderness, and from whose attacks their young particularly can with difficulty escape. They suffer most from the wolves, who hunt in packs like hounds, and who seldom give up the chace until a deer is taken. We have often sate on a moonlight summer night, at the door of a log cabin on one of our prairies, and heard the wolves in full chace of a deer, yelling very nearly in the same manner as a pack of hounds. Sometimes the cry would be heard at a great distance over the plain; then it would die away, and again be distinguished at a nearer point, and in another direction—now the full cry would burst upon us from a neighboring thicket, and we could almost hear the sobs of the exhausted deer, and again it would be borne away

and lost in distance. We have passed nearly whole nights in listening to such sounds, and once we saw a deer dash through the yard, and immediately past the door at which we sate, followed by his audacious pursuers, who were but a few yards in his rear.

Immense numbers of deer are killed every year by our hunters, who take them for the hams and skins alone, throwing away the rest of the carcass. Venison hams and hides are important articles of export. The former are purchased from the hunters at 25 cents a pair, the latter at 20 cents a pound. In the villages of Illinois and Missouri we purchase, for our tables, the saddle of venison with the hams attached, for 37½ cents, which would be something like one cent a pound.

There are several ways of hunting deer, all of which are equally simple. Most generally the hunter proceeds to the woods on horseback, in the day time, selecting carefully certain hours, which are thought to be most favorable. It is said that during the seasons when the pastures are green, this animal rises from his lair, precisely at the rising of the moon, whether in the day or night; and I suppose the fact to be so, because such is the testimony of experienced hunters. If it be true, it is certainly a curious display of animal instinct. This hour therefore is always kept in view by the hunter, as he rides slowly through the forest, with his rifle on his shoulder, while his keen eye penetrates the surrounding shades. On beholding a deer the hunter slides from his horse, and while the deer is observing the latter, creeps upon him, keeping the largest trees between himself and the object of pursuit, until he gets near enough to fire. An expert woodsman seldom fails to hit his game. It is extremely dangerous to approach a wounded deer. Timid and harmless as this animal is at other times, he no sooner finds himself deprived of the power of flight than he becomes furious, and rushes upon his enemy making desperate lunges

with his sharp horns, and striking and tramping violently with his forelegs, which being extremely muscular and armed with sharp hoofs, are capable of inflicting very severe wounds. Aware of this circumstance, the hunter approaches him with caution, and either secures his prey by a second shot, where the first has been but partially successful, or, as is more frequently the case, causes his dog to seize the wounded animal, while he watches his own opportunity to stab him with his hunting knife. Sometimes, where a noble buck is the victim, and the hunter is impatient or inexperienced, terrible conflicts ensue on such occasions.

Another mode, is to watch at night, in the neighborhood of the *salt licks*. These are spots where the earth is impregnated with saline particles, or where the salt water oozes through the soil. Deer and other grazing animals frequent such places, and remain for hours licking the earth. The hunter secretes himself here, either in the thick top of a tree, or most generally in a screen erected for the purpose, and artfully concealed like a masked battery, with logs or green boughs. This practice is pursued only in the summer, or early in the autumn, in cloudless nights, when the moon shines brilliantly, and objects may be readily discovered. At the rising of the moon or shortly after, the deer having risen from their beds, approach the lick. Such places are generally denuded of timber, but surrounded by it, and as the animal is about to emerge from the shade into the clear moonlight, he stops, looks cautiously around, and snuffs the air. Then he advances a few steps, and stops again, smells the ground, or raises his expanded nostrils, as if he "snuffed the approach of danger in every tainted breeze." The hunter sits motionless, and almost breathless, waiting until the animal shall get within rifle shot, and until its position in relation to the hunter, and the light, shall be favorable, when he fires with an unerring

aim. A few deer only can be thus taken in one night, and after a few nights these timorous animals are driven from the haunts which are thus disturbed.

Another practice is called *driving*, and is only practised in those parts of the country where this kind of game is scarce, and where hunting is pursued as an amusement. A large party is made up, and the hunters ride forth with their dogs. The hunting ground is selected, and as it is pretty well known what tracks are usually taken by the deer when started, an individual is placed at each of those passes, to intercept the retreating animal. The scene of action being thus in some measure, surrounded, small parties advance with the dogs from different directions, and the startled deer in flying most generally pass some of the persons who are concealed, and who fire at them as they pass.

The elk, has disappeared. A few have been seen in late years, and some taken; but it is not known that any remain at this time, within the limits of any of the states.

The bear is seldom seen. This animal inhabits those parts of the country that are thickly wooded, and delights particularly in canebrakes, where it feeds in the winter on the tender shoots of the young cane. The meat is tender and finely flavored, and is esteemed a great delicacy.

Wolves are very numerous in every part of the western country. There are two kinds; the common, or black wolf, and the prairie wolf. The former is a large fierce animal, and very destructive to sheep, pigs, calves, poultry, and even young colts. They hunt in large packs, and after using every stratagem to circumvent their prey, attack it with remarkable ferocity. Like the Indian, they always endeavor to surprise their victim, and strike the mortal blow without exposing themselves to danger. They seldom attack man, except when asleep or wounded. The largest animals, when wounded, entangled, or otherwise disabled, become their prey; but in general

they only attack such as are incapable of resistance. They have been known to lie in wait upon the bank of a stream which the buffalo were in the habit of crossing, and when one of those unwieldy animals was so unfortunate as to sink in the mire, spring suddenly upon it, and worry it to death, while thus disabled from resistance. Their most common prey is the deer, which they hunt regularly; but all defenceless animals are alike acceptable to their ravenous appetites. When tempted by hunger they approach the farm houses in the night, and snatch their prey from under the very eye of the farmer; and when the latter is absent with his dogs, the wolf is sometimes seen by the females lurking about in mid-day, as if aware of the unprotected state of the family. Our heroic females have sometimes shot them under such circumstances.

It is said by hunters that the smell of burning assafœtida has a remarkable effect upon this animal. If a fire be made in the woods, and a portion of this drug thrown into it, so as to saturate the atmosphere with the odor, the wolves, if any are within reach of the scent, immediately assemble around, howling in the most mournful manner, and such is the remarkable fascination under which they seem to labor, that they will often suffer themselves to be shot down rather than quit the spot.

Of the few instances of their attacking human beings, of which we have heard, the following may serve to give some idea of their habits. In very early times, a negro man was passing in the night, in the lower part of Kentucky, from one settlement to another. The distance was several miles, and the country over which he traveled entirely unsettled. In the morning his carcass was found entirely stripped of flesh. Near it lay his axe, covered with blood, and all around the bushes were beaten down, the ground trodden, and the number of foot tracks so great, as to shew that the unfortunate victim had fought long and manfully. On pursuing his track it appeared

that the wolves had pursued him for a considerable distance, he had often turned upon them and driven them back. Several times they had attacked him, and been repelled, as appeared by the blood and tracks. He had killed some of them, before the final onset, and in the last conflict had destroyed several. His axe was his only weapon.

On another occasion, many years ago, a negro man was going through the woods, with no companion but his fiddle, when he discovered that a pack of wolves were on his track. They pursued very cautiously, but a few of them would sometimes dash up, and growl, as if impatient for their prey, and then fall back again. As he had several miles to go, he became much alarmed. He sometimes stopped, shouted, drove back his pursuers, and then proceeded. The animals became more and more audacious, and would probably have attacked him, had he not arrived at a deserted cabin, which stood by the way side Into this he rushed for shelter, and without waiting to shut the door, climbed up and seated himself on the rafters The wolves dashed in after him, and becoming quite furious, howled, and leaped, and endeavored with every expression of rage to get to him. The moon was now shining brightly, and Cuff being able to see his enemies, and satisfied of his own safety, began to act on the offensive. Finding the cabin full of them, he crawled down to the top of the door, which he shut and fastened. Then removing some of the loose boards from the roof, scattered them with a tremendous clatter upon such of his foes as remained outside, who soon scampered off, while those in the house began to crouch with fear. He had now a large number of prisoners to stand guard over, until morning; and drawing forth his fiddle, he very good naturedly played for them all night, very much, as he supposed, to their edification and amusement, for like all genuine lovers of music, he imagined that it had power to soften the

heart, even of a wolf. On the ensuing day, some of the neighbors assembled and destroyed the captives, with great rejoicings.

The story of Putnam and the wolf is familiar to every schoolboy; but it is not so well known, that such adventures are by no means uncommon. The youthful achievement of the gallant revolutionary hero, has acquired dignity from the brilliancy of his after life, which was adorned with a long list of heroic and patriotic deeds, when in fact this exploit is one of ordinary occurrence among our resolute hunters. We select the following two instances, both of which are well authenticated.

Many years ago, a Frenchman, with his son, was hunting in a part of Missouri, distant about forty miles from St. Louis. Having wounded a large bear, the animal took refuge in a cave, the aperture leading into which, was so small as barely to admit its passage. The hunter, leaving his son without, instantly prepared to follow, and with some difficulty drew his body through the narrow entrance. Having reached the interior of the cave, he discharged his piece with so true an aim as to inflict a mortal wound upon the bear. The latter rushed forward, and passing the man, attempted to escape from the cave, but on reaching the narrowest part of the passage, through which it had entered with some difficulty, the strength of the animal failed, and it expired. The entrance to the cave was now completely closed by the carcass of the animal. The boy on the outside, heard his father scream for assistance, and attempted to drag out the bear, but found his strength insufficient. After many unavailing efforts, he became much terrified, and mounted his father's horse with the determination of seeking assistance. There was no road through the wilderness, but the sagacious horse, taking the direction to St. Louis, carried the alarmed youth to that place, where a party was soon raised and despatched to the relief of the hunter. But they

searched in vain for the place of his captivity. From some cause not now recollected, the trace of the horse was obliterated, and the boy in his agitation, had so far forgotten the landmarks as to be totally unable to lead them to the spot. They returned after a weary and unsuccessful search; the hunter was heard of no more, and no doubt remained of his having perished miserably in the cave. Some years afterwards, the aperture of the cavern was discovered, in a spot so hidden and so difficult of access as to have escaped the notice of those who had passed near it. Near the mouth was found the skeleton of the bear, and within the cave, that of the Frenchman, with his gun and equipments, all apparently in the same condition as when he died. That he should have perished of hunger, from mere inability to effect his escape by removing the body of the bear, seems improbable, because supposing him to have been unable by main strength to effect this object, it would have cost him but little labor to have cut up and removed the animal by piecemeal. It is most likely either that he was suffocated, or that he had received some injury, which disabled him from exertion. The cave bears a name which commemorates the event.

The other circumstance to which we allude, occurred in Monroe county, in Illinois. There are in many parts of this country, singular depressions or basins, which the inhabitants call *sink-holes*. They are sometimes very deep, circular at the top, with steep sides meeting in a point at the bottom, precisely in the shape of a funnel. At the bottom of one of these, a party of hunters discovered the den of a she wolf, and ascertained that it contained a litter of whelps. For the purpose of destroying the latter, they assembled at the place. On examining the entrance to the den, it was found to be perpendicular, and so narrow as to render it impossible or very difficult for a man to enter; and as a notion prevails among the hunters, that

the female wolf only visits her young at night, it was proposed to send in a boy to destroy the whelps. A fine, courageous boy, armed with a knife, was accordingly thrust into the cavern, where, to his surprise, he found himself in the company of the she wolf, whose glistening eye-balls, white teeth, and surly voice, sufficiently announced her presence. The boy retreated towards the entrance, and called to his friends, to inform them tha the old wolf was there. The men told him that he was mistaken; that the old wolf never staid with her young in daylight; and advised him to go boldly up to the bed and destroy the litter. The boy thinking that the darkness of the cave might have deceived him, returned, advanced boldly, and laid his hand upon the she wolf, who sprang upon him, and bit him very severely, before he could effect his retreat, and would probably have killed him, had he not defended himself with resolution. One or two of the men now succeeded in effecting an entrance; the wolf was shot, and her offspring destroyed.

The prairie wolf, is a smaller species, which takes its name from the habit of residing entirely upon the open plains. Even when hunted with dogs, it will make circuit after circuit, round the prairie, carefully avoiding the forest, or only dashing into it occasionally when hard pressed, and then returning to the plain. In size and appearance, this animal is midway between the wolf and the fox, and in color it resembles the latter, being of a very light red. It preys upon poultry, rabbits, young pigs, calves, &c. The most friendly relations subsist between this animal and the common wolf, and they constantly hunt in packs together. Nothing is more common than to see the large black wolf in company with several of the prairie wolves. The latter resembles the jackall of Asia, and if not the same animal, is a variety but little distinguished from it. The prairie wolf is timid, and seldom approaches a farm house at which dogs are kept. They

are said to have a particular aversion to the yell of the hound, and to disappear entirely from a neighborhood where a pack is kept for hunting.

Some years ago an agricultural society established at the seat of government of Illinois, offered a large premium to the person who should kill the greatest number of wolves in one year. The legislature at the same time ffered a bounty for each wolf scalp that should be taken. The consequence was that the expenditure for wolf scalps became so great, as to render it necessary to repeal the law. These animals, although still numerous, and troublesome to the farmer, are greatly decreased in number, and are no longer dangerous to man. We know of no instances in late years, of a human being having been attacked by them.

We have the fox, in some places in great numbers; though generally speaking I think the animal is scarce. It will undoubtedly increase with the population.

The panther and wild-cat, are found in our forests. Our open country is not, however, well suited to their shy habits; and they are not now numerous even in the wooded country.

The beaver and otter, were once numerous, but are now seldom seen except on our frontiers.

The gopher, is as we suppose, a nondescript. The name does not occur in books of natural history, nor do we find any animal of a corresponding description. The only account that we have seen of it, is in "Long's 2d Expedition." In a residence of many years in the country where it is said to have been most numerous, we have never seen one near enough to examine it, and to be certain that it was not something else. That such an animal exists is doubtless. But they are very shy and their numbers small. They burrow in the earth, and are supposed to throw up those hillocks which are seen in such vast abundance over our prairies. This is to some extent a

mistake, for we know that many of these little mounds are thrown up by craw-fish, and by ants.

The polecat is very destructive to our poultry.

The racoon, and opossum are numerous, and extremely troublesome to the farmer, as they not only attack his poultry, but plunder his cornfields. They are hunted by boys, and large numbers of them destroyed. The skins of the racoons pay well for the trouble of taking them, as the fur is in demand.

Rabbits are abundant, and in some places extremely destructive to the young orchards, and to garden vegetables.

The black and grey squirrels are very abundant. These beautiful, but destructive little animals, were very annoying to the first settlers, by devouring large quantities of their corn in the fields, before it was sufficiently ripe to be gathered. One peculiarity in the history of this animal is very remarkable. Sometimes, in the course of a few years, they become so numerous in one section of country, as to threaten destruction to the entire crops; when, as if by common consent they commence an emigration, which is usually from west to east, in bodies so numerous as to defy any attempt at computation, crossing the largest rivers that lie in their course. Many perish by drowning, and thousands are killed by the boys, who crowd to the shores, to intercept the weary and breathless emigrants at their landing. At the commencement of their march they are very fat; but towards its conclusion they become poor and sickly. After such an event they are scarce for several years, then multiply, emigrate, and perish as before. The cause of this phenomenon has never been explained. It cannot be want of food, for the districts they leave are often as fruitful, as those to which they direct their course, and the healthy condition in which they set out, leaves no room to suppose that the danger of starvation has driven them from home. Our hunters shoot these small animals with rifles, bringing

them down from the tops of the tallest trees, with a single ball; and when their depredations become great, large parties are formed, which scour the woods, killing thousands in a day.

In return for the animals which have left us, we have gained a great number by emigration, which were not known to inhabit this region at its first settlement.

The honey bees are not natives of this country, but they have always kept a little in advance of the white man, and while they continue numerous in the settlements are particularly so upon the frontier. On the verge of civilization, bee-hunting furnishes employment to many individuals during several months of the year; and the tables of all the farmers are amply supplied with the rich treasures of the laborious insect. Honey and beeswax are among the staples of all the new states.

Rats were not known in this country, for many years after its settlement. They were first brought, by the boats, to the villages on the shores of the navigable rivers, and gradually spread over the interior.

Birds of song but seldom enliven the gloomy monotony of the forest. Few, if any, of these, are carnivorous, and it is not until the labor of the farmer has covered the soil with fields of grain, that the cheerful notes of the songster are heard. We have now a great variety of singing birds, which have rapidly followed the population from the other side of the mountains.

Of birds, that which is most peculiar to this country, as well as most numerous, is the prairie fowl, or grouse. It is nearly as large as the common hen. The flesh is delicate and finely flavored. The female resembles the quail in shape and color, and the male, who erects his plumage and struts like the turkey and peacock, is chiefly distinguished by a tuft of feathers on the head, and a tail longer and more ornamented than that of his mate. Their only note is a low, strong, melancholy sound, re-

sembling the cooing of the dove, which may be heard at a considerable distance ; and the traveler in passing over the prairie at sunrise, hears this singular noise in every direction, and if unacquainted with its source, is at a loss whether to attribute it to a numerous colony of doves, of owls, or of tremendous bull frogs, for it partakes of the tone of each of these animals.

The prairie fowl are seldom seen in the woods, but confine themselves chiefly to the long grass of the plains, scarcely ever rising on the wing, except when disturbed. In the autumn they assemble round the cornfields and wheat-stacks in search of food, and in the winter venture into the barn yards. They do not at any time evince much shyness towards man, and may often be seen mingling with the domestic fowls, when the farmer's dwelling happens to be situated on an unfrequented part of the prairie. They are easily shot sitting or on the wing; and are taken in great numbers in traps. When the prairies are covered with snow they settle in large flocks on the trees. The writer has seen thousands of them together on such occasions. They eat freely, and fatten, when confined in coops, and could probably be domesticated with little difficulty.

Quails are numerous. These are often taken by driving them into a long cylindrical net, distended by hoops, one end of which is open, and the other closed. The net is laid at its length along the ground, with the open end against a heap of brush, or in a little thicket, and the skill of the drivers, who are usually mounted on horseback, is shewn in forcing the birds to enter it.

There are pheasants in some parts of this country, but they are seldom seen.

A few years ago the beautiful and majestic swan might be seen floating upon all our rivers, but they are now found only in secluded situations.

Geese, ducks, cranes, and other water fowl frequent

our streams in prodigious numbers. Great quantities of them are killed for the feathers, which constitute a considerable article of traffic.

The yellow plover frequents the prairies in the spring in immense flocks, and a nice little bird it is, graceful to shoot at, and very delicious to swallow.

Wild turkeys are still abundant. They are shy and difficult to shoot, but our hunters kill great numbers of them. In the spring they are found in pairs, but during the rest of the year in flocks consisting of the old pair, and the last brood. Fine turkeys may be bought from the hunters for twelve and a half cents a piece.

We have the mocking bird, the Baltimore bird, the red bird, the blue jay, the humming bird, and indeed, most of the feathered tribes which are known in the Atlantic states; with the addition of the paroquet, a bird of beautiful plumage, but very bad character, whose thievish propensities renders him a great nuisance to orchards and cornfields.

I have never seen any of those *pigeonroosts*, which have excited so much curiosity, and where these birds are said to alight in such quantities as to break down the limbs of the trees.

Of reptiles the most formidable is the rattlesnake. This animal is most usually found in mountainous situations, where the dens among the rocks afford them secure harbors; of course our plains, entirely destitute of rock and affording no suitable retreats for such reptiles, do not abound in them. The fires which annually spread over the prairies, doubtless destroy great numbers of them; the hogs which in this country are allowed to roam at large in great herds, are their inveterate enemies, and probably devour many. We have also the moccasin snake, and copperhead, both of which are very venomous; but we are inclined to think that in general snakes are not numerous.

Two instances occurred some years ago, in which death was occasioned by the bite of the spider, and the belief became current that a peculiarly venomous variety of that reptile existed among us. I have inquired carefully into both these cases, without finding the slightest evidence to support that supposition. One of the persons bitten was a young lady. She was not attended by a physician, nor are the facts of her case correctly understood. No inference can therefore be drawn from it. The other was a man who was ploughing in his field, on a very hot day, when feeling himself bitten on the arm, he suddenly struck the place with his open hand and crushed a large spider, which doubtless had inflicted the wound. It swelled rapidly, and the man alarmed ran home, and sent for a physician, who arrived in about four hours, and shortly after, the death of the patient ensued. I did not converse with the physician, but a medical friend who spoke with him on the subject, suggests the following facts: that the system of the patient was in a state that predisposed to inflammation—that the sting touched an irritable part—that the weather was extremely hot and the man heated by labor—and that his alarm and the violent exertion of running to his house, a considerable distance, added to the action of the other causes, and gave virulence to the poison, which under more favorable circumstances would only have occasioned a slight wound. The writer was once very seriously ill for several days from the sting of a bee, under similar circumstances. There have been instances in which the sting of the latter insect has occasioned death. Our inference is that the two cases above mentioned, do not furnish any evidence of the existence in this country of a variety of the spider whose bite is ordinarily attended with dangerous consequences.

CHAPTER X.

Agricultural Products.

The following remarks must be understood as applying to the state of Illinois, unless where other places are indicated. The writer's personal knowledge is confined chiefly to that region. The intelligent agriculturalist will easily apply the remarks to other sections of the country, making the due allowance for difference of latitude, and keeping in mind the great similarity of soil and exposure, which prevails over the whole western plain.

In speaking of the products of a new country, our estimate must necessarily be, to a great extent, prospective. The first settlers are too much occupied in providing the means of subsistence, to be able to make much for sale; nor do the farmers of any country raise produce to a large amount, until they are satisfied of being able to dispose of it to advantage. Trade and agriculture are so nearly connected, that neither can flourish separately. In order to support an active, steady, and lucrative trade, a variety of causes must co-operate together; and these causes must be sufficiently permanent to produce similar results throughout a series of years. The supply of produce must be abundant and regular, so as to enable the trader to make his arrangements in advance, and to calculate with reasonable certainty; and its quality must be such as to bring it into fair competition with a corresponding product from another country. Then there must be a market, easy of access; and a mode of transportation which shall be cheap, rapid, and safe, or which shall possess these advantages to a certain extent. There are a variety of other circumstances which are incidental, and which may or may not operate, at any given time; but all of which do invariably, at

some period or other, exert an influence upon trade and agriculture. Such are chiefly the condition of the circulating medium, the rate of exchange, the existence of war and peace in our own or other countries, the prevalence of famine, disease, or other calamity in large districts, and the influence of good or evil legislation.

It must be very evident, therefore, that in a new country, nothing can be settled, upon these points; and that our farmers will, for some years, be uncertain as to the proper objects upon which to expend their labor. They will be to some extent discouraged; and will exert less industry than they would if the channels of trade were fully opened, the markets regular, and the chances of success well understood. Besides, most of the products of a new country must be carried to market in a raw state, and of course in their most bulky and most perishable condition. It is clear that if, in any district, wheat may be made, but not flour, the choice of market and chances of sale are greatly reduced to the farmer; while the risk of loss, and the expenses of transportation must be greatly enhanced. In a new country, therefore, we seldom find any great variety in the agricultural products; and scarcely any are raised but such as require but little labor, are in general use, and may be disposed of in their crude state. These are generally raised in great profusion, and sold low. For these reasons the products of Illinois are comparatively few in number; but it will be seen that this fact is not attributable to the soil or climate, but to other circumstances.

This state presents to the farmer a combination of advantages, in reference to its productions, which are scarcely to be found in any other country. Situated in the same latitude with Pennsylvania, and Virginia, it yields all the products which arrive at maturity in those states; while its interior position protects it from the extremes and vicissitudes of climate which are felt upon the sea-

coast, where the warmth of spring is chilled by storms rushing from snow-clad mountains, and the ocean breeze sweeping at all seasons over the land, produces sudden changes, and often reverses, for a time, the order of the seasons. Although we are not exempt from the operation of such casualties, we believe that there is no country where the just expectations of the farmer, are so seldom blighted, as in ours. We may plant early, or gather late ; we carry on the business of husbandry throughout the whole year, and we find but few days at any one time, in which the laborer may not be usefully employed. We have the advantages of various climates, without suffering greatly from their inclemencies.

Wheat, rye, barley, buck-wheat, oats, hemp, flax, turnips, and Irish potatoes, all of which arrive at perfection in more northern latitudes, succeed equally well here. The two latter, particularly, attain a degree of size and excellence, that we have never seen exceeded, and the crops yield abundantly. The produce of the potatoe crop is from twenty to twenty-four fold. No crop pays in quantity and quality more than this, for careful cultivation. The crops raised vary from one hundred and fifty to eight hundred bushels to the acre. The latter however is an extraordinary crop. The turnip is raised only for the table, but produces well. With regard to wheat, there is some diversity of opinion; not whether this grain will grow, but whether it is, or is not, produced in this country in its *greatest perfection.* We are inclined to adopt the affirmative of this proposition. It is true, that our crops vary greatly, both in the amount and quality of the produce. But we are satisfied that this disparity arises from the degree of care bestowed on the culture. Our husbandry is yet in a rude state. Wheat is often sowed in new land but partially cleared, often upon corn ground badly prepared; often covered carelessly with the plough, without any attempt to pulverize the soil, and very gen-

erally in fields which have produced an abundant crop of grass and weeds, during the preceding autumn. Few of our farmers have barns or threshing floors; the grain is preserved in stacks, and trodden out upon the ground, with considerable loss, and injury. With all these disadvantages excellent crops are raised, and the grain is remarkably good. We learn from a respectable source, that the wheat of Illinois and Missouri, is superior to that of the other western states ; it is worth more to the baker, and the bread made from it is lighter, and more nutritious. This fact is attributable to the richness of the soil, and the dryness of the atmosphere; the former cause brings the grain to its greatest state of perfection, while the latter protects it from all those injuries which are produced by moisture.

In the years 1830 and 1831, wheat was raised on the prairies both of Illinois and Missouri, which weighed sixty-eight pounds to the bushel. The writer would not state this fact, if he had not himself seen a bushel of this grain carefully weighed and measured, besides having the corroborating testimony of gentlemen residing in both these states, who all agreed in making the same statement. Sixty pounds is the standard weight of a bushel of wheat in the states east of the mountains ; this weight is very rarely exceeded, and sixty-three is probably the maximum of the finest grain. In Ohio it has been known to weigh sixty-four, and we have heard of one instance of its weighing sixty-five pounds. We saw a bushel of wheat weighed in Kentucky in 1831, which weighed sixty-seven ; in Illinois and Missouri alone has it been found to reach to sixty-eight, and that weight we suppose to be not uncommon there.

A gentleman from the east, who traveled through Illinois in 1830, was so struck with the whiteness and beauty of the flour made at Collinsville, as to be induced to carry a sample to Boston, where it was pronounced

superior to the best Baltimore flour. From these facts we are justified in asserting, that the soil and climate of this country is particularly propitious to the growth of wheat; and that the prairie region especially, produces this grain in its greatest perfection. Twenty-five to thirty bushels are raised to the acre, and the price varies from fifty to seventy-five cents. Steam mills, for the manufacture of flour, have been erected in various parts of Illinois.

Ohio, is the empire state of the Union for wheat; flour is one of the greatest staples. The other staples for export, are whisky, pork, lard, bacon, oil, hides, hay, beef, cattle, horses, butter, cheese, and apples. The agriculture of this state has assumed a steady character. Mills and distilleries afford amply the means of manufacturing grain for market; while roads, canals, and other facilities for transportation, have become so numerous as to encourage the farmer to exert his best energies.

The staples of Kentucky, for export, are tobacco, horses for the saddle, harness and plough; mules, cattle, hogs sheep, poultry, beef, pork, lard, lard oil, corn, oats, hay, potatoes, apples, whisky, cotton bagging, bale rope, and hemp. The sheep are estimated at 1,000,000, mostly in small flocks; the great portion of the wool is manufactured in the family. Nineteen-twentieths of the capital of the state, is said to be employed in agriculture.

Tennessee is the empire state of the Union for Indian corn. Her staples for export are similar to the other states of the west, adding cotton, and including a larger proportion of tobacco.

Missouri also raises tobacco, and a little cotton for domestic use. Her other productions are similar to the other western states.

The products of Indiana, Illinois, Michigan, Wisconsin and Iowa, are similar to those of Ohio.

Indian corn is the great staple of the whole west. It is

raised in immense quantities, with but little labor, and is sold at from 8 to 50 cents per bushel; thousands of bushels being annually disposed of in the interior parts of the country at the former price. It constitutes the prominent article of food for man, and of provender for stock. There is no grain that can be cooked in so many ways; none is more delicious, more nourishing, or more generally palatable to the whole population among whom it is raised. The poor find in it the cheapest article of food, while at the tables of the wealthy it is a highly prized and indispensable luxury.

If a western farmer be asked the question, how many bushels of corn are raised to the acre, the usual reply is, *one hundred.* This quantity may be produced, on fine soil, with assiduous culture; but, under ordinary circumstances, with careful attention, 60 bushels is about the average crop.

This grain is particularly suited to the climate and soil of the Western States, and to the habits of our farmers. Delighting in a rich soil, it finds a congenial home in the deep loam of the south and west; and requiring great heat and moisture, without being injured by the extremes of either, it is less affected than any other crop by the variableness of our climate, but luxuriates alike under floods of rain, or in seasons of intense heat.

A remarkable and curious evidence of the value of this grain, is found in the fact that it constitutes one-half of the whole bread-stuff product of the United States, in proof of which we refer to the following statement which we find in Hunt's Merchants' Magazine for December, 1846:

	"*Prod. for* 1844.	*Prod. for* 1845.
Wheat, - - -	95,607,000	106,548,000
Rye, - - -	26,450,000	27,175,000
Corn, - - -	421,953,000	417,899,000
Buckwheat, -	9,071,000	10,258,000
[illegible] - -	3,627,000	5,160,600

Oats, - - -	172,247,000	163,208,000
Rice, - - -	1,862,650	1,496,150
Potatoes, - -	99,493,000	88,392,000
	830,310,650	820,136,750

The average for these two years, of the gross product of the staple articles of food, in the United States, is 824,717,700 bushels; and the average product of corn for the same two years is 418,926,000, or a little more than one-half.

It is therefore truly said, in the article just alluded to, "Indian corn is pre-eminently the wheat of the Western States, and in no small degree of the Middle. It enters into the consumption of every state of the Union. The average product of 420,000,000, in round numbers, is said to be greatly enhanced by the incoming crop. Adhering, however, to our basis, we shall be not much in error by assigning

7 per cent. for seed, - - - - -	29,400,000
Domestic consumption, equal to five bushels for each individual, - - - - - - - -	100,000,000
For feed of pigs, stock, &c. - - - - - - -	200,000,000
For exportation, - - - - - - - - -	90,520,000
	419,920,000"

The prominence which has been given to the single article of corn, as an element in the industry and wealth of the country, by the recent advance of prices, affords an interesting subject of remark. For some years previous to the increased demand, in 1846–7, for exportation to Great Britain, the average value of corn per bushel had been, at New Orleans, about 40 cents, and at Baltimore, Philadelphia, New York and Boston about 50 to 56 cents. This price was not sufficient to stimulate its production for exportation, for although it could be raised in the Western States for from 10 to 15 cents, and transported to New Orleans from localities bordering on our navigable rivers, for

from 12 to 15 cents, the liability of the grain to damage, the commissions and other charges, but above all the heavy risk for insurance on an article so bulky and perishable, left no margin for profit. It has been raised, therefore, though in immense quantities, chiefly for home consumption, for food for man and beast, and as an element in the production of beef, pork, lard, whisky, &c. But the advance of prices consequent upon the late foreign demand, has created a market for this grain in the Atlantic cities, and has opened to the farmer a new and most prolific source of wealth. It is probable that the demand will continue, and we can hardly imagine a richer boon that could be conferred by Providence upon our country: the grain is produced by a simple process of culture, it is admirably adapted to our soil and climate, is highly productive, and at fair prices will pay the farmer better for his labor than any other product which can be raised on a large scale. Mines of gold would be valueless in comparison with the crops of corn that will cover our rich, broad plains, if the market be fair, and the way to market open.

The quantity of Indian corn raised in six of the Western States in the year 1845, is stated in the valuable report of the Commissioner of Patents, for that year, as follows:

Tennessee,	70,265,000
Ohio,	57,600,000
Kentucky,	54,625,000
Indiana,	30,625,000
Illinois,	25,584,000
Missouri,	15,625,000
	254,324,000

Which, at 40 cents per bushel, is worth $101,729,600.

The returns from Arkansas, Iowa, and Wisconsin, in the Report from which we extract the above, seem to be defective, and we have not at hand the materials to supply the

deficiency, or to make an allowance for Western Virginia and Pennsylvania.

The exportation of corn has hitherto been so limited, and its price so low, that it may be considered as a new element in our commerce; the foreign demand for it has scarcely began to exercise a stimulative effect upon its production, which will now be largely and rapidly increased; so that if we make a fair allowance for the omissions in the above statement for the natural increase of the country, and for the increased cultivation to which the improved prices will give rise, it may not be considered extravagant to estimate the quantity to be produced in the Western States and Territories, for the next five years, at 350 millions of bushels per year, and its annual value at 40 cents. at 140 millions of dollars, or if it be valued at only 30 cents per bushel, 105 millions of dollars. It is true that but a part of this large product will be exported, but it is as true, that the price of that part will determine the standard of value for the remainder, and will regulate the earnings of the farmer, and the aggregate of wealth produced to the country through this source. The freight and insurance upon an article so bulky and perishable, and of such immense magnitude in quantity and value, constitute important items, which are now taxed upon this product, to be paid by the consumer, or to be deducted from the gains of the producer, unless indeed, these expenses be so great in proportion to the value of the article as to confine it to a strictly home consumption, as has been the case in regard to the largest portion of it. There is no agricultural product which has been more depressed by the niggardly policy of our government on the subject of the improvement of our rivers; nor any class of citizens who have been so much injured by that policy, as the farmers—the men who control the elections, and who might, by united and judicious efforts, settle this important question. It is very

obvious that any facilities afforded to transportation would afford a saving to the grower and the purchaser, which would be the means of increasing both the demand and the production, and of giving stability to this invaluable grain as a staple. During the great demand for corn in the spring and summer of the present year, the freight charged upon its transportation from Pittsburgh to Philadelphia by the Canal and Rail-road, was *one cent per pound;* a charge equal to its whole value at Pittsburgh, and which would not have been asked, nor paid, if the government had discharged a plain duty to the people by rendering the navigation of our great rivers easy and safe at all seasons.

Pumpkins are planted in our cornfields, and produce very abundantly. They are used to a limited extent as food for man, and being cut into strips are dried for winter use. During the autumn and early part of the winter they are fed *ad libitum* by the farmers, to their horses, cattle, and hogs, and are considered very nourishing and fattening, and as affording a wholesome change from grain and dry food.

Beans are somewhat largely raised, both for home consumption and for exportation.

Cotton, tobacco, and sweet potatoes, which are indigenous to more southern latitudes, succeed well in all except the most northern parts of this region. Cotton has not become a staple for exportation, because its production requires more labor than can be afforded to it in a new country, where there are no slaves. But the farmers in Illinois, Missouri, and the southern parts of Indiana and Kentucky, raise it for home consumption: they make all that they use, and most of their families are clad in cotton fabrics, manufactured at home.

Our tobacco crops are not exceeded any where. It has not been extensively produced, except in Kentucky and part of Missouri, for the same reason that prevents the raising of

cotton; but it has been tried in all the western states with success. It forms a staple of Kentucky, where it is produced in large quantities. From a part of Illinois, lying near the Wabash, a good many hogsheads have been annually exported, and the result of the experiment has been altogether satisfactory. A few hogsheads sent from Kaskaskia to New Orleans some years since, were pronounced by the inspector to be the best ever brought to that market. We could not adduce a stronger proof than this, in favor of our soil and climate. The tobacco plant, although coarse in its appearance, is one of the most delicate of the vegetable kingdom. It thrives only in a rich, light, warm soil, requires to be planted early in the spring, and gathered late in the autumn. In every stage of its growth, it needs culture and attention, and is at all times sensitive to cold, and easily destroyed by frost. When we say, therefore, that ours is one of the best tobacco countries in the world, we assert the strongest evidence of the fertility of the soil, and the mildness of our climate.

Of the grasses it is hardly necessary to speak. The prairies, bottom lands, and forests, abound in excellent pasturage; and there can be little doubt of the success of a species of production, which is indigenous to the country. Artificial grasses have been extensively introduced, and have succeeded well; but those who have seen the cattle wading in prairie grass as high as their backs, cannot doubt that pastures, equally luxuriant, and far more nutritious, may be produced by art, when these shall be destroyed. Grass is the natural and characteristic growth of the country. The *blue grass* grows spontaneously wherever the soil has been trodden hard; it skirts the road-sides, and covers the commons around our towns; the sites of Indian villages and encamping grounds, though long since deserted, are often discovered by the verdant carpet of blue grass which clothes the soil. In Kentucky it is extensively cultivated

for pasture, and is highly esteemed. Hay is exported to the more southern states, where it finds a ready sale.

The *Palma Christi*, or Castor Bean, has been extensively raised, particularly in the south-western part of Illinois, near St. Louis, at which city it finds a market for manufacture. The quantity of castor oil made there has been considerable, and the quality good.

Rye and barley are not generally cultivated in the western states, because they do not bear exportation to advantage, and are but little esteemed for home consumption. Indian corn is cheaper, and is greatly preferred, as a breadstuff, and wheat is within the reach of almost all. Both these grains are however produced in sufficient quantities to supply the demand of the breweries and distilleries, and to test their adaptation to our soil, in which they succeed well. The production of barley has been greatly increased lately in consequence of the increase of breweries in our cities and towns. The demand for beer has been created by our foreign population.

Oats are raised in every part of the country, and are very productive. They are used for horse-food, but for no other purpose.

Hemp and flax grow well. The latter seems to have been superceded in its primary uses by cotton, the fabrics of which are now so various and so cheap. But the plant is still raised for the domestic purposes of the farmer, and for the seed, which is used extensively for manufacture. Linseed oil is made at Cincinnati in such quantities as to form one of the regular staples for exportation, besides supplying our own market.

Hemp has been cultivated very extensively and with success in Kentucky for many years, and the product is said to be of excellent quality. Mr. Clay has considered it so important a product, that, as a legislator, he has been unceasing in his efforts for its protection from foreign com-

petition, while he has recommended its cultivation by example, and with his pen, and has used his best efforts to ascertain and teach the best modes of preparing it for market, and to introduce the American article into use in our Navy and commercial marine. The rich lands of all the western states are well adapted to the culture of this valuable plant. The quantity of net hemp produced to the acre, is from six hundred to one thousand weight, varying according to the fertility and preparation of the soil and the season. The price of the lint when prepared for the manufacturer, has varied from three to eight dollars, for the long hundred. The average price now may be quoted at from three to four dollars. It is now raised in Ohio and other states, and is a principal staple for several counties in Missouri, where it is raised in such large quantities for exportation, as to rival the production of Kentucky. There are large manufactories for the conversion of hemp into bagging, at Louisville, Newport, and Maysville in Kentucky, and at Cincinnati.

The following remarks on western hemp, are extracted from the New Orleans Price Current, of September 1, 1847.

"So late as the year 1841–42, the total receipts at this port from the west were only 1211 bales; as nearly the whole production was—and had been for a series of years—consumed in the interior, in the manufacture of cotton bagging and rope. About this time, however, the attention of government was directed to our home product, and measures were taken to test its applicability to naval purposes. The tests applied, under the direction of scientific men appointed for the purpose, gave highly favorable results; and the expectation of an extended market gave a stimulus to enlarged cultivation. Our first notice of the article was in our annual statement of 1st September, 1844; when we took occasion to remark that the day was "proba-

bly not far distant when American hemp would not only supercede the use of the Russian in our own marine, but successfully compete with it in the markets of Europe." This prediction has been more speedily fulfilled than could have been anticipated; as will be seen by the fact that the receipts from the west this season have been 60,238 bales, while the imports from Russia into Boston and New York, have been less than 500 tons. Of the quantity received here 47,411 bales were exported to the north, against 24,265 bales last year, and 4,977 bales to Europe, against 6,851 bales the year previous; but, notwithstanding this increase in the supply, prices have averaged much higher than in any previous year; and to this fact may be attributed the falling off in the foreign export; the increased demand for home use having driven most of the European orders out of market. It may be proper here to remark, however, that the increase of receipts does not present the true ratio of increase in production; for the reason explained in our last annual statement; when we stated that high freights in the early part of the season, and subsequently low waters in the rivers, had prevented a considerable portion of the Missouri crop from reaching market. The portion of the crop of 1846 thus detained in the interior is estimated to have been about 16,000 bales; and it is this addition to the crop of 1847 that has swelled our receipts this year to 60,238 bales; which at an average of 375 lbs. per bale is equal to about 10,000 tons. The comparative receipts, and average prices, for a series of years, will be shown by the following table:

	BALES.	PER TON.
1842–43,	14,873	$80 00
1843–44,	38,062	66 00
1844–45,	46,274	60 00
1845–46,	30,980	60 00
1846–47,	60,238	90 00

The extreme rates for dew rotted, which description em-

braces the bulk of the supply, have this year been $58*a* $125 per ton; the lowest price early in September, and the highest in the early part of April, when supplies had not yet begun to arrive freely, and the markets of the north were bare, with an unusually active demand for cordage. About the same time, too, there were some sales of hackled at $135*a*$142 50, and of water-rotted at $200 per ton; but these prices soon gave way under the pressure of heavy receipts and high freights, and rapidly ran down to $80*a*$85 for dew rotted, which were the prevailing rates up to the latter part of July, when the bulk of the supply having been disposed of, and the demand continuing, the rates recovered, and close at $110 per ton. The total exports since 1st September have been 52,388 bales, of which 47,411 bales have been shipped to northern ports, and 4977 to Europe, viz—to Liverpool 1896, London 709, Glasgow 184, New Ross 199, Antwerp 201, Dundee 1745, Plymouth 43.

Our information respecting the growing crop leads us to the conclusion that the supply will be much less than during the past season. It is said that in Kentucky not only have the lands usually sown with hemp been, to a considerable extent, devoted to other products, but that the average yield is likely to be curtailed by bad seed, and damage from storms. In Missouri we understand that the crop is expected to be about the same in extent as in 1846; but the arrivals from that section must show a material falling off; as parts of several previous crops came forward among the receipts of last year."

There is every reason to believe that our climate is very congenial to the production of silk, and that it will become a valuable staple. It has already been produced in sufficient quantities for experiment. The industrious and ingenious community, which has so long flourished in our country under the spiritual guidance of the late venerable Mr. Rapp,

have raised the worm and manufactured silk with great success. We have seen handkerchiefs, ribbons, and vestings, made by them at their town of Economy, which were fine and beautiful. At Richmond, Indiana, or in that vicinity, the production of silk has also been successfully pursued, and very handsome fabrics of that manufacture sold in Cincinnati. Mr. John Russell of Illinois, who was favorably known some years ago by the ingenious productions of his pen, and who gave his personal attention to the rearing of silk worms, remarks, in an article written for the Illinois Magazine, in 1831:

"The culture of silk is extremely simple, so far as concerns the production of the balls or cocoons, unconnected with any further process. All who have reared silk worms in our country, read with a smile the directions found in European books, for regulating the heat of the room where they are kept, by the scale of a *thermometer*, and by a stove and other apparatus. No insect is more hardy than the silk worm; and the mode of managing it is so simple, that any person of ordinary capacity, by the aid of a few general directions, and his own observations, can hardly be at a loss in any stage of the process. The expensive laboratories and apparatus of Europe, are all dispensed with in the United States," &c.

"It is the simplicity of the art that constitutes one of its strongest recommendations. Children and females, whose labor for want of employment suited to their condition, is, in a great measure, lost, are fully equal to raising silk worms; and thus to diffuse cheerfulness and plenty around many a dwelling, where want and its attendant miseries are now found."

"Of the simplicity of the process, and the high profits derived from it, we will give a practical example from our own state. Dr. Greene of Belleville, in his circular of the present year, states: two of my boys, the eldest 14, the

other 12 years of age, attended 40,000 of the common silk worms. During the two first weeks, the worms being small, scarcely half an hour a day was taken up, and during the last two weeks, not more than two hours. The produce of these worms was 80 pounds of balls or cocoons, equal to about 10 pounds of wound silk. Most of this was manufactured into sewing silk, which sold on the spot at from $6,50 to $7,50. The time taken up in attending to this, did not interfere with the actual business of the farm, and in five weeks the whole process was completed."

These worms " were fed on shelves, in the dwelling and out houses, and with no regard to temperature. The worms were healthy, and the produce, at least in weight, equal to that of the most expensive laboratory."

Mr. Smith of Baltimore, says, in one of his publications, "one female and a boy can attend, with ease, to 100,000 worms, if they devote all their time to them, which would yield in finished silk, 315 dollars." In some parts of Connecticut, the girls attend to their worms in barns, and produce as good silk as those who construct laboratories.

America is destined to be a rich silk growing country, and there is no part of our continent so well adapted to this branch of industry, as the western and south-western states, where the insect may be reared with no other protection than that afforded by open sheds. The black mulberry, on the leaves of which the worms feed and thrive, is a hardy native of our soil, but the silk produced from it is not fine ; the *morus multicaulis*, or white mulberry, grows luxuriantly without any culture, and is the proper food of this valuable insect.

CHAPTER XI.

Fruits.

The western states are too new to afford the cultivated fruits in great abundance; but the experiments which have been tried, sufficiently attest their peculiar adaptation to our soil and climate; and if further evidence be desired, it is found in the quantity and excellence of our wild fruits; for it is fairly inferable, that where the latter grow spontaneously, the corresponding domestic fruits, and those of a similar character, may be produced by art. We have the grape, plum, crab-apple, cherry, persimmon, gooseberry, mulberry, strawberry, raspberry, pawpaw, and blackberry, growing wild. Of these, the grape is the most important, and perhaps the most abundant. It is found in *all the western states*, and in every variety of soil; in the prairies, it is interwoven with every thicket, and in the river bottom, it climbs to the tops of the tallest trees. The vine is very prolific, and the fruit excellent. Indeed, we do not know of any part of the United States, in which the native grape flourishes so luxuriantly; and when we consider this fact, in connection with the mildness of the climate, we may well be encouraged to hope, that the vines of foreign countries will find here a congenial soil. We know of one gentleman, in Illinois, who made twenty-seven barrels of wine in a single season, from the grapes gathered, with but little labor, in his immediate neighborhood; and we suppose that the quantity might have been increased almost indefinitely, had the encouragement been sufficient. The French, who first settled this country, are said to have made a wine resembling claret; which was so good, that the merchants of Bourdeaux, used exertions to prevent its exportation, and procured an edict to that effect.

The vine has succeeded well at Harmony and Vevay in Indiana, under the culture of the foreigners who settled at those places, but their wines were not such as to grow into repute.

A public spirited gentleman at Cincinnati, Mr. Nicholas Longworth, has devoted much attention to this subject, and has introduced many varieties of foreign grapes. He has spared neither labor nor expense in the endeavor to procure and naturalize such as might be useful. A few of them only have succeeded; and he has come to the conclusion, that, as a general rule, we must depend on the native grapes for fruit. To his persevering example and his publications, we are indebted, more than to any other cause, for the success with which the vine has been cultivated, and the extent to which it has been introduced, though recently some other gentlemen have devoted great attention to the subject; among the most conspicuous were the late Jacob Resor Esq., and Dr. Melchoir Flagg.

Mr. Longworth has a number of vineyards occupied by tenants, chiefly Germans, who make large quantities of wine every year. Foreigners have not proved the most successful cultivators of the grape, or makers of wine. Not being educated persons, they do not easily change their modes of labor, nor recognize the difference between their own country and ours, in soil and climate, which would indicate the necessity of such changes. The industry and perseverance of the Germans render them useful citizens and valuable cultivators; but they have taught us little; and we must depend on the ingenuity of our own people, for the discoveries and improvements by means of which the grape shall be brought to the perfection of which we think it susceptible in this country.

The Cincinnati Horticultural Society, established in 1843, has exercised a very salutary influence, in disseminating a taste for rural pursuits, and creating a spirit of

emulation among cultivators of fruits and flowers. From their last report, we find that there are in the neighborhood of Cincinnati 83 vineyards, containing about 250 acres, 114 acres of which are in bearing, the remainder having been but recently planted, and that the product of wine for the year 1845 was 23,219 gallons. This wine was worth from 50 to 75 cents per gallon, and the whole crop probably yielded to the cultivators $40,000. The crop of 1846 was much larger, and the vineyards are increased.

The best grape cultivated here for wine, is the Catawba, a native, which thrives and bears well, while it yields a palatable wine, from which it is thought a good sparkling Hock or Champagne could be made. The experiment has been made by Mr. Longworth and others with the most satisfactory results, and there is but little doubt that in the course of a few years we shall produce this delightful wine in abundance. The wine now made is a dry and somewhat acid article, resembling the Rhenish, and better, we are told, than the common wines of that region. We are told in the report above alluded to, that in Cincinnati, sales of American Champagne have been made, where one hundred bottles sold for $125. It now sells readily for from $1,00 to $1,50 per gallon. The common retail price for good Catawba wine is from 40 to 50 cents per bottle. One German is said to have retailed one thousand gallons, the produce of the vintage of 1845. Alluding to the crop of that year, stated to be 23,219 gallons, the Report above quoted concludes, "many of the vineyards then bore for the first time; and more than one-half of the crop was cut off by the frost and rot, which made it as great a failure as will be likely to occur in any one year. The average yield of wine per acre, for five years in succession, with proper care and attention, may be safely calculated at 450 to 500 gallons. Most of our vineyards, as may be presumed by the names in the table, are cultivated by Ger

mans and Swiss. Several, however, of the older and larger ones, belong to our distinguished horticulturist, N. Longworth Esq., to whom is justly entitled the praise of introducing into this vicinity the cultivation of the vine, for which he may be considered a public benefactor."

Among the pioneers in this culture which promises to be so useful, was the late Jacob Resor Esq., whose son has furnished the following interesting particulars in regard to his vineyard. The vineyard has a southern exposure, fronting on the Ohio river; it was planted with rooted plants in 1834, and contained at that time, 1775 vines, planted in rows four feet apart, and three feet distance in the row—the ground being previously trenched, and the stones taken out to the depth of two feet.

In the fall of 1837 the first crop was picked, as follows: 163 bushels of grapes, from which was made 667 gallons of wine. At this time there were 1125 Isabella and Cape vines, yielding 113 bushels, making 469 gallons, and 630 Catawba, yielding 51 bushels, making 198 gallons.

In 1838,	the	vintage	produced	327 gallons.
" 1839,	"	"	440	"
" 1840,	"	"	305	"
" 1841,	"	"	512	"
" 1842,	"	"	485	"
" 1843,	"	"	538	"
" 1844,	"	"	414	"
" 1845,	"	"	632	"

We close this subject with the following interesting extract, from a pamphlet by Mr. Longworth, published in 1846:

"The day is not distant, when the Ohio river will rival the Rhine in the quantity and quality of its wine. I give the Catawba the preference over all other grapes, for a general crop for wine. Sugar was formerly added. The

Germans have taught us better. Where the fruit is well ripened, sugar will injure it, where intended for long keeping; where the grapes do not ripen well, I should still add from 6 to 10 ounces of sugar to the gallon of must. It rivals the best Hock, and makes a superior Champagne. The Missouri grape makes a fine wine, resembling Madeira; but is less productive than the Catawba. I have heretofore considered this a French Pineau grape, as it is a delicate grower with us; but I sent some of the plants to my sister, in New Jersey, where the soil is poor, stoney and stiff. It there grows as luxuriantly as the wild grape of the woods, and is perfectly hardy; and I now deem it a native. I obtained it of Messrs. Prince, of Long Island, twenty-five years since. The berry is small, the bunches of medium size, berries free from a hard pulp, and very sweet. The Herbemont is a fine table grape, and makes a fine wine; but is subject to rot. The Lenoir much resembles it, if not identical, which some consider it. I do not. The Ohio is a fine table grape, bunches much larger than either of the former; but experience does not enable me to recommend it highly for wine. It has a peculiar flavor, and resembles a foreign variety I have heard highly lauded, but does not suit my taste. The Bland is a bad bearer: does not ripen well, nor make a good wine, but is a fine table grape. I do not believe it a native grape. Gen. Harrison informed me, that it was introduced into Virginia sixty years since, by a French gentleman of the name of Mazzei. The Elsinborough is a good table grape, and free from hard pulp."

"Norton's seedling is far inferior as a table grape, to the Herbemont, Ohio, Lenoir, Elsinborough and Missouri, which it resembles in the size of its fruit. It has a pulp. I am trying it this season on a small scale, for wine. The grapes were very ripe, and the wine has much body, and is of a dark claret color, though pressed as soon as gathered.

I do not admire the flavor of the wine. Writers tell us to the contrary, but grapes may be too ripe to make good wine; and I incline to the opinion that this was the case with my Norton's seedling. The grapes were pressed as soon as gathered, yet the wine was nearly black. A certain proof that a fermentation had taken place in the fruit before gathered. It was increasing the saccharine principle, at the expense of the aroma and flavor."

"In the hope of inciting other Germans 'to go and do likewise,' I will state the result at one of my vineyards this season. Sixteen years since, I bought an unusually broken piece of ground on Boldface creek, four miles from the city. The soil is rich, but abounds in stone. I had a tenant on it four years, who was bound to plant a vineyard. At the end of four years nothing was done. I tried a second, and after three years, found no grapes. I then gave a contract to a German, (Mr. Tuferber), who had a wife, daughter, and three stout boys. I gave him a hard bargain; I required him to trench and wall with stone, six acres for grapes, in three years, and nine acres in five years. He was also to plant out a peach orchard, and tend an apple orchard, I had on the place. The wine and proceeds of the orchards were to be equally divided. I carefully avoided climbing the stony hill for three years, expecting the same result as formerly. When I visited the hill, at the end of three years, I found the six acres handsomely trenched and walled, and set with grapes. There are now nine acres in grapes. The tenant complained this year, of the rot in his vineyard. I am in the habit of selling to the tenants, my share of the vintage, at a price that enables them to sell at a profit. I this season sold at 75 cents per gallon at the press for the Catawba, 62½ cents for the Cape, and 50 cents for the small quantity of Isabella made. He has paid me $661 for my share of the wine, and for his share and the profit on my part. has realized the

sum of $1,392 50. The Catawba he sold at $1 25 per gallon."

"The best crop for the extent of ground this season, was at the vineyard of Mr. Rents, about four miles from town. Two acres yielded 1300 gallons. This is as large a yield as I have known, taking two acres together. To select particular spots, I have raised at the rate of 1470 gallons to the acre. The grapes at the vineyard of Mr. Rents would have ripened better, had one-third of the bunches been cut off early in the season. Where the crop is very abundant, it requires a very favorable season to ripen the fruit well."

"Six hundred and fifty gallons to the acre, is a large yield, and the season must be favorable, or they will not ripen well. A large crop is often occasioned by leaving too much bearing wood. This should always be avoided; for even if the crop ripens thoroughly, too much of the sap is taken by the fruit, and too little left to produce good young wood for the next season's crop."

"This season I have retained a part of my share of the wine, that I deemed the best, and have also bought a portion of the same quality from the tenants at an advanced price. A part of it is fermented, with a view of bottling it for Champagne wine. The residue will undergo a full fermentation, and I shall bottle it when two years old, pure as when it came from the press; when it will be of the character of dry old Hock. Heretofore, all the wine made at my vineyards, has been sold to our German coffee houses, and drank in our city. That which I have retained this season, is intended to be sent abroad, in the hope that it may lead persons in other sections of the country, to turn their attention to the cultivation of the grape for wine."

"I have for thirty years experimented on the foreign grape, both for the table and for wine. In the acclimation of plants, I do not believe; for the White Sweet Water

does not succeed as well with me, as it did thirty years since. I obtained a large variety of French grapes from Mr. Loubat, many years since. They were from the vicinity of Paris and Bourdeaux. From Madeira, I obtained six thousand vines of their best wine grapes. Not one was found worthy of cultivation in this latitude, and were rooted from the vineyards. As a last experiment, I imported seven thousand vines from the mountains of Jura, in the vicinity of Salins, in France. At that point the vine region suddenly ends, and many vines are there cultivated on the north side of the mountain, where the ground is covered with snow the whole winter, from three to four feet deep. Nearly all lived, and embraced about twenty varieties of the most celebrated wine grapes of France. But after a trial of five years, all have been thrown away. I also imported samples of wine made from all the grapes. One variety alone, the celebrated Arbois wine, which partakes slightly of the Champagne character, would compete with our Catawba."

"If we intend cultivating the grape for wine, we must rely on our native grapes, and new varieties raised from their seed. If I could get my lease of life renewed for twenty or thirty years, I would devote my attention to the subject, and I would cross our best native varieties with the best table and wine grapes of Europe. We live in a great age. Discoveries are daily made that confound us, and we know not where we shall stop. We are told of experiments in Mesmerism, as wonderful as the grinding over system would be; but I fear the discovery will not be brought to perfection in time to answer my purpose, and I must leave the subject with the young generation."

"As I have before stated, from the Catawba grape, at my vineyards, this season, three of my tenants assure me, the yield was upwards of five gallons to the bushel. Where most of the grapes were separated from the stems, the yield

was six and a half gallons to the bushel. They may *talk* of a larger yield in Germany. Mr. Hebermont boasted of making upwards of three thousand gallons to the acre, in South Carolina. I presume he judged from the product of a single vine."

"I would not recommend any individual to hire hands, and cultivate the grape extensively for wine, with a view to profit. But I would recommend landlords to rent from 15 to 20 acres to Germans, for vineyards and orchards, on shares. We have more to learn in the manufacture of the wine than in the cultivation of the grape. And I would recommend our German vine dressing emigrants, to purchase or lease a few acres of rough, cheap land on the Ohio, or near it, with a view to the cultivation of the grape. Land will be suitable for it, that is too rough for the plough, and eight or ten acres will give employment to a whole family."

"Thus far, our wine has met with a ready sale in our own city; but with the contemplated extension of the grape culture in this vicinity, we shall soon be compelled to look abroad for a market. We have predjudices to overcome, 'for a prophet is not honored in his own country.' We become fond of the flavor of particular wines from a continued use of them, as some of our citizens have of Big Bone water, and the bilge water taste of the Spanish Mansinaella. Our domestic wines have a flavor of their own, and although they would generally be preferred by persons not used to the flavor of particular wines, with wine-drinkers it will require time to form a taste for them. It was so with our German population. For a time they gave a decided preference to German wines. They now greatly prefer the domestic, and will pay for it double the price of foreign. If we cannot otherwise suit the palates of those accustomed to the flavor of European wines, we can gratify their tastes by infusing into the must, the juice of the elder berry, dried elder blossoms, rosin, and nineteen

other ingredients which their writers tell us are used to flavor their wines."

"It has been considered a settled principle that good wine cannot be manufactured in the United States. We have this predjudice to overcome, and the quality of our wine will not of itself, always enable us to do it. Two strong instances occur to my mind, that happened in our city. A gentleman in our own city, in whose judgment in wines great confidence was placed, could never be induced even to taste our domestic Hock, though a great admirer of the imported article. On two or three occasions I knew him to take a glass, and praise it highly; but the moment that a smile from the host told him of his error, he backed out, *readily discovered* his error, and could not be induced to make a further trial. But on a certain occasion a friend invited him to dine with him, and drink a glass of superior Hock, recently sent him as a present. The bait took—the gentleman praised the wine highly, and pronounced it equal to any he had ever drank, and proved his sincerity by not leaving the table until he had two bottles under his belt; and for the next month never met his host, without inquiring if all his fine wine was gone, and expressing a great desire to give it a second trial. After he was fairly committed he was told it was the native Catawba. From that day he knocked under, and acknowledged his predjudices had blinded him."

The earliest fruit which ripens is the wild strawberry, which is found rearing its modest stem, and yielding its rich berry in every part of the United States. The climate of the western states is congenial to it, and in favorable situations the fruit is delicious and the product great. Extensive spots on the prairies are found covered with it.

The cultivated strawberry is reared at Cincinnati in the most extraordinary quantities, and of the finest quality. It seems to be the favorite fruit of the gardeners—perhaps on

account of the congeniality of the soil and climate to its culture, and the comparatively small degree of skill and labor required by it. Certainly the quantity produced is almost marvelous, and the size and flavor of the fruit unrivalled. We quote the following remarks from the Report of the Cincinnati Horticultural Society, for 1846:

"The more efficient cause however of the extensive cultivation of this fruit, was the discovery which Mr. Longworth was the first to publish, of the distinction between staminate and pistillate plants—of male and female plants, or of those which bear and those which are barren. Where this distinction is not observed, the male plants occupy a large portion of the beds, while the fruit is borne by the females, and the former, being the most vigorous, soon overrun the ground and extirpate the latter. But since our gardeners have been taught to select the bearing plants, and to draw from their beds all but a few of the male plants, the product has been large and invariable. It is somewhat singular that a fact so simple, and so easily tested, should have been pertinaciously denied for years by some horticulturalists, and that it has been with some difficulty established by the gentleman to whom we owe its announcement; although the practical gardeners in our neigborhood were not slow to adopt it, and by means of it have been eminently successful.

"The person who discovered, or who first made a practical use of the theory of male and female plants, was a Mr. Arbegust, a market gardener of Philadelphia, who excelled in strawberries, and who removed to Cincinnati about the year 1816. Mr. Longworth says of him, 'Mr. Arbegust for many years sold nine-tenths of the strawberries brought to our market, and raised the Hudson only. Whilst I could, from one-fourth of an acre, scarcely raise a bushel, he would raise 40 bushels. His fruit was much larger than

any other brought to market, and commanded from twenty-five to thirty-seven and a half cents per quart. He made a handsome competence from the sale of this fruit. His secret he kept to himself, and had been as much noted for the size of his fruit, and the quantity raised on a given space of ground, in Philadelphia, as he was here. A chance observation of a son of his one day, in my garden, saying, "I must raise but little fruit, as all my plants were males," first led my attention to the subject. I soon discovered that there were what he called male and female plants, and communicated the fact to our market gardeners. The result was, strawberries rapidly increased in our market, till as fine as had been raised by Mr. Arbegust, were sold at from three to ten cents per quart, and he ceased to cultivate them.'

"Immense quantities are raised for the Cincinnati market, one individual, (Mr. Culbertson,) having sent to market, in a single day, four thousand quarts, and employing sixty hands to gather them. All the famous eastern varieties are cultivated here, and do well. Besides these, very fine seedlings have been raised by Mr. Mottier, Mr. Longworth, and others, that are as large, prolific, and high flavored, as have been described by eastern writers. The plan of shipping them to New Orleans, packed in ice, has just commenced, and may eventually become an important branch of business, as they can be taken down in a week by our regular packets."—*Report Hort. Soc.*

So remarkable were the statistics of our strawberries considered, that in 1846 the Horticultural society appointed a committee to ascertain the facts, a duty which they discharged by attending the market daily, and inquiring at the stalls the number of quarts actually on sale. The result is embraced in the following report, which may be relied upon as strictly accurate.

REPORT

Of the Committee of the Cincinnati Horticultural Society, on the Statistics of the Strawberry, and the quantity sold in the Cincinnati market, for the year 1846.

May	19th,	10	bushels.	June	1st,	100	bushels.
do	20th,	20	do	do	2d,	300	do
do	21st,	20	do	do	3d,	300	do
do	22d,	25	do	do	4th,	300	do
do	23d,	55	do	do	5th,	300	do
do	25th,	20	do	do	6th,	350	do
do	26th,	250	do	do	8th,	100	do
do	27th,	200	do	do	9th,	350	do
do	28th,	200	do	do	10th,	300	do
do	29th,	250	do	do	11th,	250	do
do	30th,	300	do	do	12th,	150	do
		E	E	E	D		

Total, for 22 days, 4,150 bushels.

D. K. Cady, *Chairman.*

The wild gooseberry is very full of thorns, and produces a small fruit, of an agreeable taste. It is scattered throughout the west, but is most abundant on the upper Mississippi. There is one variety without thorns.

Pawpaws are very abundant on the bottom lands and rich hills. The fruit is delicious; and those who have overcome a distaste which the cloying richness, and singular flavor, occasions to a palate unaccustomed to this very elegant production, become exceedingly fond of it. Scarcely any brute will eat the pawpaw; even the omniverous hog will not touch it. It is said that the racoon has taste enough to be fond of it; if so he has a rich banquet in almost exclusive enjoyment, for we know of no other animal, but man, by whom this fruit is relished.

The wild plum, is found in all the western states, and bears immense quantities of fine fruit. The varieties are numerous. Its growth is an indication of fine land. It is scattered thinly through all our alluvial soils near the rivers, and is found in dense groves on the prairies.

Of domestic fruits, the peach and apple are most common; the pear is less generally cultivated, but succeeds equally well. Our apples are remarkably fine; the trees grow rapidly, are smooth, vigorous, and healthy; they bear abundantly and the fruit is large and finely flavored. Orchards are numerous in Ohio, Kentucky, and Indiana, and very prolific. In the more western states, the apple tree has not yet been cultivated to the same extent; but we have never seen this tree flourish better or produce finer fruit than in Illinois. No market in the United States, is supplied with finer apples, or with a greater abundance than that of Cincinnati; it is perhaps, in respect to this fruit, unequaled.

In the report of the Horticultural Society, already quoted, the apple is mentioned as follows:

"The soil and climate of the Ohio valley seem to be peculiarly well adapted to the culture of this fruit. Eastern fruits, when cultivated here, grow so much larger and fairer, as scarcely to be recognized as the same varieties. With so fine a climate, and the production of so many valuable seedlings, it is not strange, that large quantities are raised and shipped, of a quality that cannot be rivalled in any part of the Union. The early settlers of Ohio, then without any of the facilities of communication of the present day, and unable to bring trees hundreds of miles over rough roads and through an uninhabited wilderness, provided themselves with large quantities of seeds which were promiscuously sown. This accounts for the large number of excellent seedlings found at the present day. It is well known that American apples generally are so much superior to those grown in Europe, that they are now a regular article of export."

Of our delicious peaches, we shall speak briefly. They cannot be excelled in size or flavor. The fruit however often fails. Our winters are so short and variable, that the

buds often swell prematurely, and are destroyed by frost even before the opening of spring. But when the trees bear they are loaded with immense quantities of fine fruit. Taking a number of years together, the peach will probably bear about as often as it will fail. Sometimes it will bear every alternate year, and sometimes fail for several years successively. Some good seedling varieties have been produced in the west; and these, when fine, are to be preferred to the engrafted fruit, as more hardy, and better adapted to the climate.

Quinces, cherries, and plums, succeed well; and the same remark will apply to the gooseberry, the currant, the strawberry, and the raspberry. We have seen all these fruits growing in great perfection; and in no instance have we seen much art bestowed on their culture—scarcely any beyond the act of planting.

We have several native varieties of the raspberry. The common sort, which bears a dark berry early in the spring, is very abundant and a prolific bearer. These are sold in large qantities in the markets of our cities, succeeding immediately after the strawberry. The Ohio monthly, or ever-bearing raspberry, is a variety of great merit, bearing fruit constantly from June to November. Several very fine foreign varieties are produced in our gardens, and supply the markets of our cities with large quantities.

CHAPTER XII.

Farming and Improvements.

Having described the pastoral habits, and loose mode of farming, which prevail throughout the greater portion of the new States, it is necessary to qualify those remarks, in

reference to large districts of the more densely settled parts of the country, into which improved forms of cultivation have been introduced. In the neighborhood of all the cities, and larger towns, the progress of improvement is distinctly visible, in the more careful and economical tillage, and the substantial style of building. Along the shores of the navigable rivers, where the busy sound of steam machinery is heard passing along the water, and wherever a rail-road, a canal, or a Macadamized road, penetrating the country, opens the way to market and an avenue for crowds of travelers, there the wilderness ceases to be the predominating character of the landscape, the log cabin disappears, and a brick or framed farm house rises in its stead. The numerous stumps, and the tall dead trees, whose blackened stems and spectral limbs deform the clearings of the new settlements, have mouldered into dust, and orchards and meadows adorn the land.

Along all the avenues of commerce and travel, the villages have thrown off their original roughness, and are greatly improved in appearance. The first hamlets in which human beings congregate in new countries are exceedingly rude. The houses, built of rough logs, are inferior even to the cabins of the farmers—the latter being larger and having all the comforts of which such edifices are susceptible, while the former, more hastily erected by new settlers, who are often unaccustomed to this form of building, are scarcely superior to the lodge of the Indian. Stuck down upon the very edge of the road, without door-yards, or shade trees, with no attention to comfort or ornament, they form the most desolate and undesirable residences which are to be found in the whole scope of our country—and it is from these specimens, that foreigners, as well as some of the gentlemen and lady tourists of our country, describe our western people, when in fact, but few of those to whom that name properly applies, dwell in vil-

lages. But the genius of trade—an unostentatious, but a most munificent traveler, as he sweeps through the land, scatters gold broadcast, and his track is marked by the outward signs of opulence. Handsome churches and court houses, either in the Gothic or Grecian style, are becoming common; and genteel dwelling houses of brick or wood, painted white, and surrounded by trees and shrubbery, indicate an awakened spirit of improvement, with taste, and the desire for comfort; and give an air of rural beauty to many of these towns. We hope to see this taste still further cultivated, and to find the villages and towns of our interior, which are often beautifully situated, and surrounded by attractive scenery and agricultural wealth, excelling also in embellishment and refinement.

In Western Pennsylvania, the improvement, equally observable throughout that great state, is very striking. The summits and the precipitous sides of the Allegheny mountains, so bleak and forbidding in their aspect, contain a large population of industrious and enterprising farmers, who have occupied all the rich valleys and level spots, built good houses, and exhibit in the appearance of their farms a high state of agricultural progress. It is surprising to find so much labor bestowed upon places so unpromising, when the west abounds in the richest and most inviting lands. The difficulty of cultivating these mountain fields, and the disadvantages, as we should esteem them, of their cold climate and secluded position, are compensated by the demand for agricultural products, created by the concourse of travelers and wagons which pass the mountain roads and bring the market to the farmer's door.

As we proceed westward, from the mountains to Pittsburgh or Wheeling, we traverse a hilly region, which, in its natural state, seemed to bid defiance to the hand of industry and to the advance of civilization, interspersed with rich and beautiful valleys. We saw this country a few years

ago, when only the choice lands were under cultivation; the precipitous and rocky hills were clothed with forests which seemed destined to be their permanent covering. Substantial, though unsightly, houses of stone there were, and a few of brick, occupied as taverns and dwellings; but the most common habitation was the log cabin. The appearance of the country is now entirely changed. The hills which seemed so uninviting to rural enterprise, are denuded of timber and under fine cultivation. The log-houses have given place to substantial, and, in many instances, to ornamental edifices of brick and frame. Good fences, meadows, and orchards, abound, and the whole country exhibits a smiling and flourishing appearance. The roads are good. In this respect the policy of Pennsylvania has been exemplary. With a topography so mountainous and rugged as to present the most discouraging obstacles, she was the first state in the Union, to construct turnpike roads and canals, and was the munificent pioneer of the great system of internal improvement. I say nothing of the more recent policy of the state in regard to her expenditures or her debts; her early example and labors, in developing the magnificent mineral and agricultural treasures of her own interior, and in opening a way to the west, deserve the lasting gratitude of the nation. The universal approbation which has attached to that beneficent policy is seen in the vast extent and success of the imitations in other states.

In Western Virginia the want of roads for commerce, has checked the advance of agricultural improvement. If the noble project, now in contemplation, of a rail-road from Richmond to Guyandotte, connecting the Chesapeake Bay with the Ohio river, shall be carried out, that road will be extended from the Ohio across the rich valley of the Scioto, and the fertile plains south of it, to Cincinnati, and then Western Virginia will bloom as a garden—the enterprise of the sister state will be ingrafted on her people, emula-

tion will be kindled, and wealth will be poured into her lap. Virginia, famed for patriotism, talent, eloquence, and hospitality, will add industry and frugal economy to the list of her social virtues; she will dig wealth from her mines and her soil, and will no longer resemble the Roman Matron who was rich in her sons, but whose sons were her only wealth.

Leaving the Ohio at Beaver, thirty miles below Pittsburgh, and traveling by canal thence to Warren, and from the latter place by stage to the beautiful city of Cleveland, we cross the Western Reserve, and see but little wilderness. The country is level, and the land fine, though not so rich as the soil in the southern and central districts of Ohio. The farmers are employed chiefly in grazing—large fields of grass are seen, and much cattle. The habitations are neat framed houses, painted white, with convenient out-houses, and the labor-saving contrivances which mark the residences of New England husbandmen. The villages are neat, but not populous. The ride is a pleasant one, and not laborious.

As a specimen of the rich prairie lands of Ohio, the traveler might select the country lying adjacent to Urbana and Bellefontaine. Here he would see a rolling or undulating surface, of unrivalled fertility, covered with great fields of wheat and Indian corn. In the season of harvest, when the wheat is ripe for the sickle, and the corn growing towards maturity, the eye is delighted and the mind astonished, with the vast area that is covered with these valuable products—with the fields of vast extent, joined to other fields of equal breadth, spreading out in every direction, as far as the eye can reach, covered with the finest wheat, and the most magnificent corn, whose heavy and pendant ears show that a genial soil and climate have given to either grain its greatest exuberance of growth. Broad meadows and orchards are interspersed; cattle, hogs, and

horses abound; the farm-houses are commodious; and the intelligent traveler, as he proceeds mile after mile through these scenes, recognizes the evidences of a surpassing amount of agricultural wealth, industry, and comfort—the indications of an uncommonly productive country, and of a people far advanced in the progressive scale of improvement.

Taking Cincinnati as a center, the signs of progress in the arts of industry are very satisfactory. Ascending the Miami Valley for a hundred miles, and embracing a wide expanse on either hand, a region of vast extent is presented, and of unsurpassed fertility. Level, or gently undulating, it is all arable, easily tilled, and capable of bearing immense crops in continued succession. A canal, draining its whole length, and several Macadamized turnpikes, all leading to the Ohio at Cincinnati, offer cheap facilities for transportation, and stimulate the energy of the farmer in the raising of agricultural products. Wheat, corn, hogs, and whisky, are the great staples, and are produced in almost incredible quantities; in addition to which the country produces almost every thing that will grow in this climate, among which are: horses, cattle, hemp, flax, oats, barley, beans, apples, butter, cheese, feathers, hay, onions, potatoes, &c.

The improvements in this region are striking. The farming is in the best style of modern agriculture. There is not that close economy which is necessary where the lands are poor, and the tillage difficult, nor is the same attention and ingenuity requisite, in manuring the soil, and in observing nicely the proper rotation of crops; but the farmers are laborious, and their grounds securely inclosed and well tilled. Orchards are numerous, and much of the fruit choice. The primitive habitations have given place to very handsome, and, in many instances, to elegant dwelling houses of brick, stone, and frame, surrounded by orna-

mental trees, shrubbery, and fruit trees. Large barns indicate plenty and a liberal economy. Improved breeds of cattle and hogs are seen in the fields. All the indications are those of an advanced state of civilization—of a people temperate, energetic, and highly prosperous.

The town of Hamilton is situated on the eastern bank of the Miami river, and Rossville on the western bank, twenty-one miles from Cincinnati. At Hamilton some enterprising individuals have constructed hydraulic works, by throwing a dam across the Miami river, and bringing the water to the town by a canal about four miles in length. The canal is intended to convey 25,000 cubic feet of water per minute, and is of sufficient capacity to pass a volume of water, measuring in its cross section, 280 superficial feet, or 70 feet average width by 4 feet deep. The fall is twenty-eight feet, and there is an aggregate of water power sufficient to run 166 pairs of mill stones. This is a magnificent water power, and cannot fail to render this place the seat of numerous manufactories. Connected with Cincinnati by the canal, and by a turnpike road, on which lines of omnibusses afford an easy form of transit to any number of passengers, and with a rail-road in prospect which will soon be constructed; situated in a country abounding in timber, stone, and other materials for building—a country in which living is cheap, life secure, and every comfort easily attainable, the spot is peculiarly favorable for manufacturing. Cincinnati can furnish cotton, wool, iron, and most other raw materials, as cheaply as any other place.

These remarks may be applied, and some of them more strongly, to Dayton, a very beautiful city, the gem of the Miami Valley, situated fifty miles from Cincinnati, in the midst of a delightful farming country of the same general description as that which we have just noticed. This city is laid out upon a liberal scale, with fine wide streets, adorned with many beautiful private residences; and has already

some fine public buildings. The court house, when finished, will be a noble structure. The water power here, from the canal, and from Mad river, is abundant, and manufacturing is already in full progress. The turnpike roads centering here are numerous, the surrounding country very attractive, and the farms highly improved.

If we pursue the course of the canal northwardly, up the Miami Valley, to the flourishing towns of Troy and Piqua—or if we travel eastward, over a beautifully undulating prairie surface, to the pleasant town of Springfield, we find the same rich soil, the same high state of cultivation and improvement. And we no longer wonder at the prosperity and rapid growth of Cincinnati, for although we have examined but *one* district of the vast area of which she is the center and emporium, we have traversed an expanse of country so broad, so rich, so well cultivated, as to be in itself capable of supporting a great metropolis.

From Springfield to Columbus, lie wide prairies, more level than the lands we have passed, and in general not so desirable for cultivation, but still fine, and admirably adapted to grass. Here are large grazing farms, and great herds of cattle.

Columbus, the capital of the state, is finely situated on the bank of the Scioto, on a high rolling plain; a beautiful town, embellished with many handsome dwellings, and some noble public institutions, and surrounded by a fine and well improved farming country.

We shall allude to but one other region in Ohio. Descending the left bank of the Scioto we pass Circleville, the site of the most curious remains of antique monuments, and reach the Pickaway plains where Dunmore was encamped when he received the celebrated speech of Logan, and where we find vast farms, well improved, and stocked with fine cattle. Ross county is celebrated for its fine grazing farms, and its excellent stock. A number of gentle-

men here, have, for many years past, devoted themselves to the raising of cattle, and to the improvement of the breeds, by importation and otherwise. Their public spirited exertions have been eminently successful, not only in stocking their own pasture fields with beautiful and well blooded animals, but in awakening attention to this useful subject, and creating an emulation among the farmers for a considerable distance around.

Chillicothe, the mart of this region, is a very attractive spot. It was a Virginia settlement, and one of the earliest in the state. Among its founders were many intelligent and refined persons. The society of Chillicothe was always good—the best, for many years, in the state; we are not certain that it does not maintain its superiority, for refinement, intelligence, and hospitality. It was the first capital of Ohio. It is an interesting spot, from the numerous remains of Indian antiquities, in this vicinity, which seems to have been the seat of a dense population. The rich valley of Paint creek, which unites here with the Scioto, abounds in mounds, some of which are large, and among the best developed of these curious structures now existing. The secret history of these receptacles of the past—the records of their authors and their uses, have thus far been sealed, and defied all scrutiny and conjecture. But few of the circumstances, which have been related as facts concerning them, have been well authenticated; and no rational solution of the mystery of their being and purpose, supported by evidence, has been published. Theories we have had, more or less ingenious, but not facts resulting from careful investigation. We are happy to be able to state that this subject has been ably and thoroughly explored recently, by two gentlemen of Chillicothe, in whom the public may place confidence—Dr. Davis and Mr. Squier. We have no personal acquaintance with the latter, but have long known the former, as a regular physician, and an hon-

orable and intelligent man. They have opened a great number of mounds, penetrated to their inmost parts, torn out their contents, and subjected them to the most patient and laborious examination. The results, which are said to be rich and curious, are to be given to the public in a forthcoming publication, which we hope will be cordially received, as we are satisfied that its contents will be as authentic, as they will be new, and will pour a flood of light upon this singular and mysterious page of history.

The scenery here is very beautiful. The city stands upon a plain, in the bosom of a valley, margined by hills, whose elevated tops afford the finest views. Until within a few years past, there seems to have been but little enterprise among the inhabitants, and the city did not grow as rapidly as other places having equal advantages; but it has lately been increasing very fast in size and business. Its Virginia origin is evident in more ways than one, and in nothing more than the hospitable size of the dwellings, many of which are handsome, and surrounded by ornamental trees, yards, and gardens, which give a rural and attractive air to the place, and render it, when seen from a neighboring eminence, embosomed in the valley, with the Scioto meandering round it, a very picturesque object.

Our volume would be swelled to an inordinate size, if we should extend these descriptions to the various places in the West which are deserving of notice. In all the choice districts, where the land is particularly fine, or the market convenient, will be found substantial farms, and a good state of improvement. We might give, as an instance, the valley of the Whitewater, in Indiana, which is drained by a canal, extending from Cambridge city, on the National road, to Lawrenceburgh on the Ohio, with a branch to Cincinnati, the length to either terminus being something over 80 miles. This valley contains an area of 400 square miles, of land of the best quality; a territory the extent of which

is said to be greater by one-fourth than the Miami Valley, and which is well cultivated and yields a large amount of produce.

The country lying adjacent to the beautiful city of Indianapolis; the fine bottom lands of the Wabash near Vincennes, Terre Haute, Lafayette, &c.; the American Bottom in Illinois, and the rich counties of St. Clair, Madison, Greene, Morgan, Sangamon, and the greater portion of the Military Tract, in the same state—are all covered with substantial farms, and valuable improvements.

We intend to make no invidious distinction, in thus pointing out a few of the most attractive districts of the West, as affording examples of an advanced state of agricultural industry. There are many other tracts that are equally deserving of notice; we have confined ourselves to such only as have attracted our personal attention. We have been in Iowa, Wisconsin, and Michigan, but have never visited the interior of either; nor have we seen that lovely region of lakes and rivers in the far north-west, which so captivated the French topographer, Nicholet, and which he thought should be called the country of Undine.

Those who had the gratification of attending the great Convention recently held at Chicago, were delighted, and, for the most part, surprised, at the evidences of commercial and agricultural wealth, exhibited by the beautiful cities of the Lake region. That interesting occasion drew together a vast concourse, from the neighboring states, and from the distant shores of the Atlantic. Eighteen states were represented, and never was a more intelligent body assembled. Men of the most elevated position and distinguished talents—legislators, lawyers, and editors, of practiced ability in debate and with the pen, sat there in council with the merchant and the farmer; and while from the former, especially the presiding officer in his inimitable valedictory,—we heard such eloquence as seldom falls from the lips of man,

in the latter we discovered an intelligent appreciation of that oratory which showed a high degree not only of common sense, but of cultivated mind. While the western farmers appeared so advantageously in their personal deportment, the flourishing cities of Buffalo, Cleveland, Detroit, Milwaukie, and Chicago, displayed unquestionable indications of large resources and active business, which showed that the agricultural regions which sustain them must be vast and most abundantly productive.

The Mass meetings which were held in this country in the Presidential election canvass of 1840, may be quoted as affording further evidence of the respectibility of our farming population. They were literally what the name given them purports—assemblages of the whole mass of the people. That which was held at Dayton, for instance, which was one of the largest, presented a most novel and picturesque spectacle. The number of people gathered there was variously estimated at from one hundred thousand to three hundred thousand souls. It was a vast and countless concourse, the number of which cannot be ascertained, or even approximated; though we are somewhat incredulous as to the figures which have been set down. For two or three days all the roads leading to the place were crowded with carriages, and horsemen, and pedestrian travelers. The city, which has very wide streets, and is spread over a large area, was crammed full of visitors; the surrounding plain, and the neighboring hills, were clad with a living and moving mass. Almost every house was thrown open to the rites of hospitality; tables profusely spread were accessible to all, decked in every variety of taste, from the most elegant repast, down to the plainest and most substantial fare; and every roof sheltered as many lodgers as could be crowded under it. The fat of the land was provided for the cherished guests; all was free—without money and without price. The excitement, always at-

tendant upon the assemblage of great multitudes, and especially by crowds brought together for party purposes, was intense. But it was evinced by the most joyous hilarity. There was no anger, no uproar, no violence. Good humor and order prevailed.

It was a most curious sight—one which disarmed party spirit, and filled the bosom of the spectator with pleasurable sensations. The American who contemplated that mass of people, so respectable, so orderly, so intelligent, so substantial, forgot that they belonged to a party, and hailed them with pride as his countrymen. They bore distinctly, but without ostentation, the marks of a people who were strangers to poverty and to oppression—a free, contented, manly people. No country of Europe, exhibiting the *whole* population of a district, could present such a spectacle. The farmers, the laborers, the mechanics, were all there, with their wives and children, their men-servants and maid-servants, and the strangers that sojourned with them—there they were, neat and well clad, with their honest faces lighted up with smiles. They came in wagons and carriages drawn by sleek horses whose glossy coats showed their keeping. The large number of fine saddle horses, pleasure carriages, and well dressed people, among a concourse of which the great majority were actually farmers, was surprising. The whole spectacle was that of a people in easy circumstances, who lived well, and possessed the means and appliances of social enjoyment. They were no longer the pioneers of a new country, the hunters, and pastoral farmers of the wilderness; but the owners and cultivators of rich farms, and flocks and herds of well bred animals—men who lived within the influence of the church and the school house, the bible and the newspaper.

We shall close this chapter, with a list showing the imports into New Orleans, by way of the river Mississippi, during one year, including articles chiefly agricultural, and

which will show the great variety, as well as the amount of our products. The reader will bear in mind that the whole of these articles are of the growth and production of the western states.

VALUE OF PRODUCE OF THE INTERIOR.

A TABLE *showing the receipts of the principal articles from the interior, during the year ending* 31*st August*, 1847, *with their estimated average prices and total value.*

ARTICLES.	Amount.	Average.	VALUE. *Dollars.*
Apples, ... barrels	39612	3 00	118836
Bacon, ... ass'd, hhds. and casks	28607	60 00	1716420
Bacon, assorted, ... boxes	8325	30 00	249750
Bacon Hams, hhds, and trcs.	14518	65 00	943670
Bacon, in bulk ..... pounds	425163	6	25509
Bagging, ... pieces	60982	10 50	640311
Bale Rope, ... coils	56201	6 00	337206
Beans, ... barrels	24536	4 00	98144
Butter, ... kegs and firkins	51384	5 00	256920
Butter, ... barrels	872	20 00	17440
Beeswax, ... barrels	1109	40 00	44360
Beef, ... barrels	32738	10 00	327380
Beef, ... tierces	21230	16 00	339680
Beef, dried, ... pounds	49000	7	3430
Buffalo Robes, ... packs	55	60 00	3300
Cotton ..... bales	740669	44 00	32589436
Corn Meal ..... barrels	88159	3 50	308505
Corn, in ear, ... barrels	619576	1 10	681533
Corn, shelled, ... sacks	2386510	2 00	4773020
Cheese, ... boxes	57429	3 50	201001
Candles, ... boxes	8496	3 50	29736
Cider, ... barrels	477	3 00	1431
Coal, Western, ... barrels	356500	75	267375
Dried Apples and Peaches, ... barrels	8870	2 50	21925
Feathers, ... bags	3498	25 00	87450
Flaxseed, ... tierces	962	9 00	8658
Flour, ... barrels	1617675	5 50	8897213
Furs, hhds. bundles and boxes, ...	328	.....	600000
Hemp, ... bundles	60238	15 00	903570
Hides, ...	98342	1 25	122927
Hay, ... bundles	95231	3 00	285693
Iron, pig, ... tons	1151	30 00	34530
Lard, ... hhds.	143	80 00	11440
Lard, ... barrels and tierces	117077	23 00	2692771
Lard, ... kegs	275076	4 00	1100304
Leather, ... bundles	3716	20 00	74320
Lime, Western, ... barrels	5994	1 00	5994
Lead, ... pigs	650129	2 75	1787854

TABLE — *Continued.*

ARTICLES.	Amount.	Average.	VALUE. *Dollars.*
Lead, bar, ...kegs and boxes	1291	15 00	19365
Molasses, (estimated crop).....gallons	6000000	24	1440000
Oats,.....barrels and sacks	588337	90	529503
Onions, ...barrels	7185	2 00	14370
Oil, Linseed,.....barrels	3637	20 00	72740
Oil, Castor, ...barrels	1439	20 00	28780
Oil, Lard,.....barrels	2573	22 00	56936
Peach Brandy.....barrels	72	16 00	1152
Potatoes,.....barrels	142888	2 00	285776
Pork, ...barrels	302170	12 00	3626040
Pork,..... .....hhds.	9452	40 00	378080
Pork, in bulk,.....pounds	8450700	6	507042
Porter and Ale,.....barrels	1363	7 50	10222
Packing Yarn, ...reels	2193	5 00	10965
Skins, Deer, ...packs	1784	20 00	35680
Skins, Bear, ...packs	71	15 00	1065
Shot, ...kegs	3992	18 00	71856
Soap, ...boxes	4361	2 60	11338
Staves, ...M.	2000	25 00	50000
Sugar, (estimated crop,) .....hhds.	140000	70 00	9800000
Spanish Moss, ...bales	5990	4 00	23960
Tallow, ...barrels	6658	20 00	133160
Tobacco, Leaf, ...hhds.	44588	55 00	2452340
Tobacco, Strips, ...hhds.	11000	$100	1100000
Tobacco, Chewing, kegs and boxes, ...	3939	12 50	49125
Tobacco,.....bales	1001	3 00	3003
Twine.....bundles and boxes	1334	7 00	9338
Vinegar,.....barrels	1059	4 00	4236
Whisky, ...barrels	126553	10 00	1265530
Window Glass,.....boxes	3805	4 00	15220
Wheat.....barrels and sacks	833649	2 30	1917392
Other various articles—estimated at..	.....	.....	5500000
TOTAL VALUE—Dollars	.....	.....	90033256
Total in 1845-46—	.....	.....	77193464
Total in 1844-45—	.....	.....	57199122
Total in 1843-44—	.....	.....	60094716

CHAPTER XIII.

Garden Vegetables—Wood and Timber.

With respect to garden vegetables, we speak from experience. The writer of this article, spent most of his leisure hours, for several years, in the cultivation of a large garden; and the remarks now submitted, are the result of careful observation. A very voluminous western writer has said, that "under this powerful sun, all the roots and vegetables are more tasteless than those of the north. It is instantly perceived that the onion is more mild, the blood beet less deeply colored; and this thing holds good, as far as my experience goes, in the whole vegetable creation. Take every thing into consideration, this is not so good a country for gardens." "Cabbages and peas, owing to the burning heat of the sun, and the dryness of the seasons, are inferior in quality and abundance."

It is to be remarked, that horticulture is an art which is seldom carried to any degree of perfection, except in populous and wealthy neighborhoods. The finest gardens are always found in the vicinity of large cities. Farmers have no time to expend in furnishing their tables with mere luxuries. Nothing requires more unremitting care, or more severe labor, than a garden; they are, therefore, usually found in the possession of wealthy

men, who keep them, at great expense, for amusement, or under the care of gardeners, who cultivate them for the purpose of supplying the markets. There are other persons, who combine economy with enjoyment, in devoting some time to horticulture; but all these classes of individuals exist, chiefly, in countries where luxury and taste prevail, to a considerable extent, or where provisions are so costly, as to make their production a matter of importance. In these cases, gardening is pursued as an elegant and useful art; and is advanced, step by step, to its greatest degree of perfection. Soil and climate, it is true, are the most important agents in the rearing of fine vegetables; but these luxuries are, after all, mainly produced by the wealth, the labor, and the ingenuity of man. In new countries, therefore, they are not to be expected. Few persons here, we might almost say *none*, have money or leisure to expend in matters of taste and luxury. Farmers, especially, are apt to commit this department to the females of their household, whose other cares allow them to devote to it but little care. We plead guilty then, as a general fact, of having bad gardens. But we by no means admit, that our vegetables are deficient, either in abundance or quality, when proper care is paid to their culture. We *know* that the contrary is true. The simple fact is, that our country teems with the bounties of nature in such rich profusion, that the people, not being obliged to labor to supply their tables, are apt to grow careless. They put their seed in the ground, and trust to providence to give the increase. Their garden grounds are not only badly prepared, and as badly attended, but the seeds are selected without any care. The reason, therefore, why, as a general fact, the art of horticulture has been brought to but little perfection at the west, is evident.

But when it is said, that the vegetables of this country are inferior in quality, we come to another question, to

decide which, it is proper to refer to the cases in which they have been subjected to a sufficient degree of culture. Almost every farmer here, raises cabbages, and we are sure that we have never seen larger or better. A hundred heads are sold in Illinois for a dollar and fifty cents. The parsnips and carrots of this country are remarkable for their size, sweetness, and flavor; the former, especially, have a richness, which we have never noticed elsewhere. Our beets are as delicate and sweet as is possible; and we only forbear stating a fact, with regard to their size, which has come to our knowledge, from the fear of startling the credulity of our readers. Peas are excellent, and very prolific. We have seen radishes three inches in thickness, and perfectly solid, mild, and crisp. Our lettuce, if well dressed, (there is a great deal in that) is capital. The tomato, is common all through this country. It is only necessary to plant it once, after which, it comes up every year spontaneously; and bears abundantly, from the middle of the summer, until nipped by the frost. Thousands of bushels of onions have been raised with no other labor, than sowing the seed broadcast, in new ground; and as to their quality, it would do the heart of a Wethersfield lady good to look at them. That goodly town of Connecticut would be depopulated, if its worthy inhabitants could see the onion-fields of Morgan county, and the military tract, in Illinois. We might enumerate other articles, but it is enough to say that, in general, the vegetables suited to our climate, are produced in their greatest perfection. It would, indeed, be an anomaly in the economy of nature, if garden plants did not flourish vigorously, in a soil of unrivaled depth, fertility, and freshness.

The vegetable market at Cincinnati is one of the finest in the world. At Pittsburgh, Louisville, St. Louis, and other large towns where the encouragement is sufficient to induce the raising of vegetables for market, they are

equal in size and flavor, to those of the eastern cities, though the variety of kinds is not so great. At the tables of gentlemen in every part of Kentucky, the profusion and excellence of the vegetables, is such as to afford a subject of remark to the observant traveler. We are well satisfied that a careful examination of this subject would show, that the horticultural productions of the west, are in general superior in size, delicacy, and flavor, to those of any other part of the United States.

We subjoin a table of average dates, extracted from Dr. Drake's admirable Picture of Cincinnati, which will enable practical men to form a tolerably accurate idea of the progress and decay of vegetation, within our season.

FLORAL CALENDAR.

March 5. Commons becoming green.
" 6. Buds of water maple beginning to open.
" 6. Buds of lilac beginning to open.
" 7. Buds of weeping willow beginning to open,
" 8. Buds of gooseberry beginning to open.
" 12. Buds of honey-suckle beginning to open.
" 26. Buds of peach tree beginning to open.
" 26. Radishes, peas, and tongue grass planted in the open air.
April 8. Peach tree in full flower.
" 8. Buds of the privet beginning to open.
" 15. Buds of the cherry tree beginning to open.
" 15. Red currants beginning to flower.
" 18. Buds of the flowering locust beginning to open.
" 18. Lilac in full flower.
" 20. Apple tree in full flower.
" 24. Dogwood in full flower.
May 9. Flowering locust in full bloom.
" 12. Indian corn planted.
" 12. Honey-suckles beginning to flower.
June 4. Cherries beginning to ripen.
" 4. Raspberries beginning to ripen.
" 6. Strawberries beginning to ripen.
" 6. Red currants beginning to ripen.
" 24. Hay Harvest.
July 4. Rye harvest begun.
" 10. Wheat harvest begun.
" 12. Blackberries ripe.

July 15. Unripe corn in market.
" 18. Indian corn *generally* in flower.
" 21. Oat harvest.
Aug. 5. Peaches in market.
Sept. 20. Forest becoming variegated.
Oct. 25. Indian corn gathered.
" 30. Woods leafless.

For the purpose of comparison, we add a few memoranda made by the writer at Vandalia, Illinois, in the spring of 1830.

April 1. Peach trees in bloom.
" 2. Asparagus fit for the table.
" 3. Peas, beans, and onions planted.
" 6. Heart's ease and violets in bloom.
" 7. Beets, carrots, parsnips, and other roots planted.
" 10. Spring had completely opened; and the prairies were green. Gooseberry and currant bushes in bloom.
" 15. Cabbage plants transplanted.
" 18. Lilac in bloom—strawberry vines in bloom.
" 19. A great variety of wild flowers in full bloom.
" 20. Nearly all our garden seeds had been planted.
" 25. Raspberries in bloom.
" 27. Lettuce, radishes, pepper-grass, &c. fit for use.
" 30. Roses and honey-suckles in full bloom.

I make no apology for adding, more at large, the following valuable remarks, in reference to the spring season of 1836, furnished in a letter to me, from my friend Dr. Clap of New Albany, Indiana.

"Vegetation has been later, especially in the fore part of the month (April) than has ever been known by the oldest inhabitants. From the 22nd to the end of the month, the weather was very open and pleasant; the thermometer ranging, in the hottest part of the day, from 75 to 85.

"The latitude of New Albany, according to the land surveys is 38 deg. 12 min. north, though stated differently in some publications. The elevation of the second bank, at the court house, by the actual survey of engineers employed by the state, is 426 feet above the tide water of Hudson river. It is on this bank the greater part of

the plants mentioned are found. On the west of the town rises a range of hills called the *knobs* running nearly due north, elevated about 500 feet, and beyond which the country is generally elevated upwards of 300 feet above the Ohio bottoms, and the vegetation some days later than on the river shore. I have been thus particular, deeming it essential to an accurate understanding of the progress of vegetation. Many floral calendars are of little value for comparison, in consequence of the want of detail in reference to elevation and local causes, as well from general carelessness.

"Professor Bigelow, who is remarkable for his general accuracy, in his observations on the peach tree in different places, concludes that vernal flowering varies *four* days for each degree of latitude. The peach in this vicinity however, varies more in its time of flowering in different years than any of our native forest trees, or even our indigenous herbaceous plants. The difference between the present year and 1834—no record having been kept by me of 1835—was 27 days for the peach, while other trees and herbaceous plants varied from 15 to 21 days.

"The foliation of the beech is probably one of the best standards of comparison between different places. It is more diffused, and adds more to the verdure of the forest, than any other tree, and the structure of its buds is such, that they continue to swell and elongate without the least appearance of verdure, until the moment they expand, when the largest leaves are nearly an inch in length, and frequently grow more than an inch per day, for some time.

"From a hasty examination of calendars of vegetation, at Deerfield and Plainfield, Mass., the German Flats, N. York, and Philadelphia, it appears probable that Professor Bigelow's estimation of four days for each degree of latitude, is not high enough, especially between the western and eastern states. Although the mean temperature

is said to be the same for the corresponding parallels of latitude on both sides of the Alleghenies, the season is probably earlier in the western states, the soil and elevation being the same. The subject, however, requires some years of careful observation to obtain the proper data for comparison.

"The earliest appearance of the flowers is the time noted in the following table unless otherwise stated. The plants enumerated are not all that were observed but those only that had just bloomed at the time of observation.

April 1836.

2d	Elm,	*Ulmus Americana.*
"	Red Maple,	*Acer Rubrum.*
4th		*Erigenia Bulbosa.*
"	Rice Anemone,	*Anemone Thalictroides.*
5th	Spring Beauty,	*Claytonia Virginica.*
"	Spice bush,	*Laurus Benzoin.*
9th	Shepherds purse,	*Thlaspi Bursa pastoris.*
"		*Ranunculus abortivus.*
10th		*Luzula Campestris.*
12th	Grey Willow,	*Salix Grisea.*
13th	White flowered Adder's tongue,	*Erythronium Albidum.*
"	Blue violet,	*Viola Cucullata.*
"	Yellow do.	" *pubescens.*
"	Ground Ivy,	*Glechoma hederacea.*
"	Mouse ear cress,	*Arabis Thaliana.*
"	Wild Sweet William,	*Phlox divaricata.*
"	Calico Weed,	*Diclytra cucularia.*
14th	Chickweed,	*Stellaria media.*
"	Yellow flowered Adder's tongue,	*Erythronium Americanum.*
"	American water cress,	*Cardamine Virginica.*
16th	Greek Valerian,	*Polemonium reptans.*
"	Peach trees, (beginning to blossom)	*Amygdalus Persica.*
17th	Red Currants,	*Ribes Rubrum.*
19th	Dandelion,	*Leontodon Taraxacum.*
20th	Morello cherry, var. of	*Prunus cerasus.*
21st	Flowering Almond,	*Amygdalus nana.*
"	Peach trees in full bloom.	
22d	Sassafras,	*Laurus Sassafras.*
"	Red bud,	*Cercis Canadensis.*
"	Ragwort,	*Senecio Aurea.*

22d	Plaintain endweed,	*Gnaphalium plantaginum.*
"		*Stellaria pubera.*
23d	Lungwort,	*Pulmonaria Virginica.*
24th	Apple tree, (beginning to flower)	*Pyrus malus.*
"	Thyme leaved speedwell,	*Veronica serpyllifolia.*
"	Morello cherry in full bloom.	
25th	The forest becoming green, caused mostly by the leafing of the beech.	
"	Crane's bill,	*Geranium maculatum.*
"	Dogwood,	*Cornus Florida.*

NOTE. The white involucrum expanded, the inner and proper petals were not unfolded until 8 days later.

26th	Violet wood sorrel,	*Oxalis Violacia.*
		Ranunculus runcuvatus.
"	Striped Violet,	*Viola Striata.*
27th	Thornbush, Red Haw,	*Cratægus coccinea.*
"	Lilac,	*Syringa vulgaris.*
"	Fœtid buckeye,	*Esculus pallida.*
"	Quamansh,	*Phalangium esculentum.*
"		*Iris cristata.*
29th	Black Whortleberry,	*Vaccinium resinosum.*
"	Meadow rice,	*Thalictrum dioicum.*
"	Barr flower,	*Hydrophyllum Virginicum.*
"	Blue wort,	*Leontin Thalictroides.*
30th	May Apple,	*Podophyllum peltatum.*
"	Mouse ear chick weed,	*Cerastium vulgatum.*

In so vast a region, comprising a vast amount of timber, there is of course, a great variety in the species and quality of that production. The most common kinds are oak, hickory, ash, poplar, cotton wood, walnut, sugar maple, beech, sycamore, buckeye, gum, cypress, cherry, locust, peccan.

Cedar and pine are abundant in the northern regions of some of the tributaries of the Ohio and Mississippi, but are not found in quantities sufficient to be rendered useful, within what may be properly termed the western country. Large quantities of lumber, suitable for building, are prepared on the Allegheny river, and on some of the higher tributaries of the Mississippi, from the cedar and pine of those higher latitudes, and floated in rafts to the more southern districts; by which means all the

shores of the Ohio and Mississippi are well supplied with the best description of scantling, plank, and shingles.

The several varieties of the oak are found in almost every part of our country. The heavy timbers for house and ship building, are made of this wood; it is converted into flooring, and other descriptions of heavy plank; and is used in many manufactures of which wood is the material. It is also a very general and excellent material for fuel; and is used by the farmer in fencing, for rails, posts, and plank. There are few localities in which it is not found, nor is there any timber so extensively useful.

The ash is also an excellent wood both for fuel and for plank; it is very abundantly distributed over the whole country, and is much used for a variety of purposes.

Many varieties of the hickory are spread through the whole region. This is considered our best wood for fuel for domestic purposes, but has little other value. The farmers use it for fence rails, but it is neither so easily split, nor so durable as oak or ash.

The black walnut and cherry are hard fine grained woods, used chiefly by cabinet makers, and are sufficiently abundant for the purposes to which they are applied.

Poplar is abundant in some districts, but is not prevalent in the southern parts of the region under description.

The black locust, on account of its durability, is extremely valuable for posts, or for any purpose where the capacity of resisting the action of moisture is required.

The sugar maple is found on our richest soils, both in the upland and bottoms, and is a valuable timber independently of the rich product which it yields to the sugar maker. The season for making the sugar is in February —when the cold frosty nights begin to be succeeded by clear warm days.

The cottonwood resembles the poplar in appearance and texture, and is found chiefly in low alluvion lands, and on the margins of rivers, where it grows to an im-

mense size. The young groves shoot up with uncommon rapidity, and are highly ornamental to the banks which they cover; but the wood is of little value.

The sycamore is seen towering to a great height on the margins of our rivers; but is fortunately not abundant in other localities, as it is entirely useless; as are also the gum, and the buckeye.

The cypress, which is found only in the immense swamps of the southern part of this region, is a white soft wood, which is used for making shingles, and for various kinds of wooden vessels which are made by the cooper or turner.

The peccan is found only at a few points on the Ohio and Wabash near the junction of those rivers, and on the Mississippi near its confluence with the Kaskaskia. It yields a rich delicious nut, which is highly prized, and of which a few hundred bushels have been annually gathered and shipped to New-Orleans. The tree resembles the hickory in appearance, and is of that family.

The oak, the hickory, the beech, and the walnut, afford a prodigious quantity of nuts and acorns, which form the chief part of the *mast*, upon which the immense droves of hogs are subsisted and reared in our forests.

The large quantity of wood used by the steam boats, has made this an article of active and extensive sale, and will very shortly render all the lands bordering on the navigable rivers extremely valuable. The consumption of wood is already so great, that the supply is barely sufficient to meet it, and at some points it is wholly inadequate. The boats are every year increasing rapidly in number, and we know of no branch of business in which the farmer could engage more profitably, than in supplying them with fuel. There is scarcely an acre of uncleared land bounded by the river which will not yield 100 cords of wood—many will yield 150 cords—but experienced men consider the average product 100 cords to

the acre, including only such wood as is suitable for steam boats. The price varies from $2 to $3 *per cord*, according to the locality, season, scarcity, &c., so that taking $2,50 per cord as the average, the product of an acre of woodland would be as follows:

100 cords of wood at $2,50 - - - - - - - -						$250
Deduct for cutting	50	cents	per	cord,	$50	
hauling	25	"	"	"	25	
other labor	25	"	"	"	25	=100
				Clear gain,		$150

The price at which such land may be purchased, cannot be stated with any precision, as it would vary according to circumstances. But little of the most valuable land on the large rivers remains in the hands of the government; and the private owners have become sensible of its value. Such however is the great variety of soil, situation, and other particulars, that a purchaser may suit himself at any price, from $1,25 per acre, to $100 per acre.

The best kinds of wood for steam boats are oak, beech, and ash. Cottonwood affords a lively fire, but burns away too fast. Hickory, which is the best fuel for culinary purposes, is useless for steam boats, on account of the quantity of coals with which it fills the furnaces. The wood for steam boats is required to be split fine, and kept until perfectly dry.

CHAPTER XIV.

Domestic Animals.

The west is the paradise of domestic animals. The climate is suitable to the horse, the cow, the hog, and the sheep; their food is plentifully spread over the whole wide expanse of country; the cheapness of land, and the thin-

ness of the population, allow the cultivators to occupy large farms; while extensive tracts of land remain unenclosed, affording an abundance of wild pasturage. There is room therefore for the animal to roam and feed.

In those parts of the country which lie distant from navigable waters, and are not intersected by railroads or canals, agricultural products are of but little value. Heavy articles, such as corn and hay, will not bear distant transportation by wagon, and the farmer would get nothing for his labor but an independent and plentiful livelihood, if it were not that his flocks and herds may be driven to market. In this shape his grass and grain may be consumed and converted into money.

In those vast districts, constituting the greater portion of all the new states, which lie distant from the cities and larger towns, very small portions, comparatively, of the whole surface are occupied by farms—immense tracts of wilderness form the remainder. The population of these portions of the country, are rather pastoral than agricultural. Without a market at hand, they have no inducement to raise grain beyond the demand for home consumption; and they have no stimulant to industry or ingenuity, in regard to a multitude or a variety of products. Their own tables, though abundantly spread, are simple and easily furnished. Beef, pork, poultry, game, wheat, corn, potatoes, milk and wild honey, form the staples for food. Little else is raised. The cattle, hogs, and horses, roam at large in the woods, and upon the prairies, where for eight months in the year they find an abundant supply of food. Here are no epicures to devour the tender veal and the delicate pig—the young are all reared. These are the great nurseries, the vast sources of supply, for the more thickly settled parts of the country. The drovers go thither annually to purchase cattle, which they drive into the older settlements, where they are fatted for market.

Thus the cattle of Illinois, and Missouri, are driven into Ohio, where they are turned into rich pasture fields, and fed with grain until they become fat, when they find a market at Cincinnati, or are driven across the mountains.

Of all domestic animals, the hog is decidedly the most numerous and useful. The meat constitutes a chief article of food, and is chiefly used fresh, or in the form of bacon. The immense droves of hogs which are raised would seem incredible to those who are not familiar with the facts. They are reared most extensively in those districts which are thinly settled, and where they can roam at large over wide tracts of forest. During the spring and summer, the owner pays them no further attention than to look after them occasionally, to ascertain the range they frequent, and to identify his property by marking the recent litters by cutting the ears. Every farmer has a separate mark, which is recorded in a book kept by the county clerk, and the laws denounce severe penalties upon those who cut off the ears, or alter the marks of the cattle or the hogs of others.

In the frontier countries, where all the stock run at large in the woods and over the great prairies, where the wealth of the farmer consists chiefly in his numerous herds, and the value of domestic animals is very small, the practice of stealing them is not uncommon. There are in such localities many loose individuals, who live chiefly by hunting, and it seems to be the instinct of hunters in all countries, to consider that whatever runs wild in the woods, is equally fair game. The code of morals of those who dwell in the forest, and live by the gun, is very elastic. The light hold of the owner upon property thus roaming at large, and which he sees only at distant intervals, the impunity with which a trespass upon it may be committed, and the insignificance of the loss if discovered, render the temptation to commit such offenses very strong, and the

risk small. But although the loss is trifling, it is a source of extreme irritation to the farmer, and a large proportion of the feuds, the actions for trespass, and the indictments in the courts of new counties, grow out of such practices.

It sometimes happens that the number of such depredators, in a neighborhood, is considerable; and while the pioneer farmers, the owners of stock, themselves a frugal and honest race, are indisposed to notice such trespasses so long as they occur but occasionally, the rogues become bold from their numbers and from impunity. An open rupture is the consequence; indictment and civil suits pour in upon the courts; slanders, and assaults and batteries, swell the list; and if, at last, the arm of justice is found too weak to enforce the desired reformation, a *regulating party* is formed, and the stealers of hogs driven by force from their haunts.

An amusing incident, growing out of this state of things, occurred once to the writer, while acting in an official capacity, in court, in a retired part of Illinois. In delivering the charge to the grand jury, it was thought expedient to dwell on a long list of statutary offenses concerning hogs, such as stealing them, cutting off their ears, altering the marks, &c. In the midst of this grave harangue, we were interrupted by the foreman of the grand jury, a justice of the peace and member of the legislature, who having come into the box fresh from the body of the people, and having probably spent the morning in treating and being treated quite freely, felt himself uncommonly patriotic and communicative. Rising, and bowing to the court very respectfully, he said, "May it please your honor, the subject of *hogs*, in this country, is a very delicate subject—the less said about it the better. It's no use to hurt feelings."

In the autumn, when the *mast* falls, the hogs fatten rapidly, and grow very large. But although they become prodigiously fat upon the wild nuts, they are not then in a

condition to be killed for market, as the meat, and especially the fat of mast fed hogs, is soft, oily, and unsuited for curing, though not deficient in sweetness or flavor for present use. They are, therefore, taken home in the autumn, and fed on corn for five or six weeks, in which time the flesh becomes solid, and the lard white and firm. They are then driven to some of the towns on the rivers, where they are slaughtered and prepared for market.

The following remarks are extracted from an excellent article in the Cincinnati Gazette, published in March, 1843.

"The district of country in the West devoted to the raising of pork as an article of commerce, includes Ohio, Kentucky, Indiana, Illinois, Missouri, Iowa, and a part of Tennessee; but the bulk of the business is done within a circle of three hundred miles in diameter, with Cincinnati as its center, including the contiguous parts of Ohio, Kentucky and Indiana. Hogs are, however, frequently driven to this market from a distance of two hundred miles, as, notwithstanding large numbers are killed at various places in the Wabash and Miami Valleys, at Madison, Ia., Portsmouth, Chillicothe, &c., this business will concentrate in the largest cities, where labor, salt, barrels, and other facilities are naturally most abundant. In a populous city, also, the steaks, spare-ribs, &c., not used in packing, can always be disposed of for cash, without loss; and in this city, also, if any where in the West, active cash capital is always found."

"In the above district, the number of hogs prepared for market this season will not fall short of 500,000, (and this is not a larger number than usual) besides the vast amount retained for domestic consumption. Of this number, 250,000 are probably packed in Cincinnati—150,000 more will probably come here for a market, or re-shipment—and 100,000 more may be set down as the estimate for those that will be shipped from various other towns on the river,

without being landed here. Of the above number, 75,000 are raised in the Wabash Valley alone."

"Our hogs are fed on corn exclusively. They are never "fed on *mutton*," as an English nobleman lately stated at an Agricultural Fair. The stock is well crossed with imported animals from Europe, of the various Chinese, Irish, English, and Russian breeds, and is probably exceeded by none in the United States. Hogs have been raised here weighing over 1200 lbs., but the average weight runs from 200 to 250 pounds—the latter size being the most desirable."

"In Kentucky, the drovers frequently buy the hogs alive of the farmers by gross weight, as is sometimes the case in Ohio and Indiana. But generally the farmers club together (each one having his hogs marked) and drive them to market themselves in droves of 500 to 1000, and seldom less than 500, except in the immediate vicinity of the city. During the first day or two, the hogs cannot well travel more than 4 to 6 miles; but after that they travel 8, and sometimes 10 miles per day, depending upon the condition of the roads. The Berkshires are said to be the best travelers."

As Cincinnati is the great market for pork, as well as all other articles of provisions, we shall extract from the same article the following interesting particulars:

"We now propose to follow the hog into the city, and describe the manner in which he is cut, packed, and finally shipped to a market. This naturally involves the description of a Cincinnati Pork House; and for this purpose we have selected that at the corner of Sycamore street and the Canal, for many years occupied by Mr. DUFFIELD, where he cured his justly celebrated Westphalia Hams."

"The Pork House in question is one of the largest and most perfectly arranged in the world. It is 159 feet long and 92 wide, 3 stories high above the cellar, with two Lard

Rooms, each having 4 lard kettles of 100 gallons each, one Lard Press, and 3 Coolers, holding from 300 to 500 gallons each. It contains also two Smoke Houses, 30 by 40 feet, three and a half stories high, with cellars 12 feet deep, each one capable of containing 400,000 lbs. meat to smoke at one time; and during one season, each can be filled five times, thus smoking within four months 4,000,000 lbs. of meat."

"The building stands immediately on the Miami Canal; two sides of the house bound on the Canal, which here makes an elbow, thus enabling boats to unload on both sides into the house; the other two sides of the building are upon the street, and, from its favorable grade, the floors of both the first and second stories are so arranged as to be commanded by drays, which are driven in to load and unload, thus saving a vast deal of labor."

"In this house, every thing is done under cover, in all kinds of weather. From its vast extent, there is no necessity of rolling barrels out of doors for pickling, or any other purpose. It is capable of disposing or stowing 25,000 hogs in one season of four months, and not go out of doors for any thing."

"At the risk of being considered tedious, we have subjoined many particulars in regard to this leading business of our city. Although the facts are familiar to every one here, they may interest distant readers."

"The history of the Pork business in this city is interesting, when one contemplates its present magnitude. Twenty years since, we are told, it was so insignificant, that no one house was engaged in it exclusively, and the whole number of hogs then cut in one season, did not exceed 10,000. At that period, the hogs were killed (as isolated farmers now kill them in the country) out of doors, and then hung upon a pole. The butchers charged the farm-

er 12½ to 20 cents per head for killing them, retaining the offal as at present. From this insignificant beginning, the business has increased so that the number of hogs killed this year will probably reach a quarter of a million, and the butchers now frequently pay 10 to 25 cents premium per head for the *privilege* of killing them. And instead of a few houses incidentally engaged in the business a part of the year, there are now 26 Pork Houses exclusively engaged in it, and which use a capital of nearly Two Millions of Dollars, which, by the way, has been mostly foreign this season, owing to the disasters of the last three years."

"Having reached some of the extensive Slaughtering Establishments in the neighborhood of the city, a bargain is made with the butchers to kill and dress them, which is done for their offal, and the hogs, after being dressed, are also carted into town at the expense of the butcher. But as we have described all the minutiæ of this part of the business in the Gazette of the 3d inst, we here omit it."

"The hog is bought by the Pork Packer, completely dressed by the Butcher, and delivered at the Pork House. The first thing is to weigh him. He is then passed to a block 8 feet long, 4 feet wide, and 2 feet high from the floor, at which two Cutters stand, one on each side of the block, and each armed with an exceedingly sharp cleaver, about 2 feet long, and 6 inches wide. Two other men pass up the hog on to the block, placing him upon his side. One Cutter cuts off the head, the other the hams, each at a single stroke. The hams are passed to the Ham Trimmer at an adjacent table, who trims them ready for salting. The head is sometimes sold to the Soap Boiler, in which case it is thrown into a heap near the door, to be handy for him—at other times it is used in making Prime Pork, and is then passed to a hand to split, clean, and wash, ready for the Packer. The sides and shoulders, still left on the block,

are split in two lengthwise of the hog through the center of the back-bone. The leaf lard is then trimmed out—the shoulder cut from the side, and passed into the cellar, to be cured in bulk in dry salt. The side, if from a heavy, fat hog, is split, each side, into four parts lengthwise with the rib; the pieces or strips thus cut being about 6 inches wide and 22 long. The thickest strips of the sides have the but-end of the rib and back-bone taken out, and made into Clear Pork—the lighter, thinner sides, are sometimes cut up for Prime Pork or thin Mess, but are most commonly cured with the shoulders, and made into Bacon. The usual day's work for a set of 50 hands is to cut up in the above manner 500 hogs on *one* block—but 800 have been cut up on one block at DUFFIELD'S Pork House, equal, of course, to 1600 on two blocks, which can be cut in one day of 12 working hours; and in fact 3 hogs have been cut up in one minute."

"Such is the system and expedition observed in the more extensive Pork Houses, that 500 hogs received into the Pork House one day, are all ready for shipping the next day (within 24 hours), including the weighing, cutting, packing, rendering the lard, and branding, and all in as neat, clean, handsome style, as is done any where in the world. This has been done in Cincinnati."

"The different grades of Barrelled or Pickled Pork known to the trade, and to the Inspection Laws, are, in order and quality, Clear Pork, Mess, Prime, Chine, (or Rump, it being only one end of the Chine) and Joles. As to the minutiæ of these different sorts of Pork, we are not familiar enough with the business to give them; besides, it might be prying too much into the secrets of the trade to inquire. We can, in general terms, however, say, that the Barrel Pork, packed by our *Cincinnati* Packers, will compare with the best packed in the United States, as to quality, weight, sufficiency of salt and cooperage, and for keep-

ing almost any length of time—not excepting the Irish Pork."

"The mode of rendering Lard is very simple, the leaf and trimmings being merely cut up with cleavers into pieces 2 inches square, and thrown into large iron kettles of 100 gallons each. After it has cooked about 3 hours, it is strained, and pumped up into Coolers of 300 to 500 gallons, cooled to about 100 degrees Fahrenheit, and then drawn into kegs or barrels as wanted.

"Most of our large Pork Houses are capable of disposing of 1000 hogs per day (although they seldom desire so many), employing for that purpose about 75 hands at an *average* of about $1,00 per day. Some houses have cut and packed this season over 20,000 hogs."

From a valuable table, published in the New Orleans Price Current, "shewing the receipts of the principal articles from the interior, during the year ending 31st of August, 1847," with their value, we have compiled the following statement, showing the imports into that city, from the interior, or from the Western States, of articles manufactured from the hog:

		Number Packages.	*Val. in Dols.*
Bacon, assorted,	hhds. and casks,	28,607	1,716,420
" "	boxes,	8,325	249,750
Bacon Hams,	hhds. and tres.	14,518	943,670
Bacon, in bulk,	pounds,	425,163	25,500
Lard,	hhds.	143	11,440
"	bbls. and tierces,	117,077	2,692,771
"	kegs,	275,076	1,100,304
Lard oil,	bbls.	2,573	56,936
Pork,	bbls.	302,160	3,626,040
"	hhds.	9,452	378,080
" in bulk,	lbs.	8,450,700	507,052
			$11,309,972

If we suppose that one-fifth of the whole amount of the pork, lard, &c., of the west find their way to the Atlantic cities through the Northern Lakes, the Pennsylvania canal, &c., we should ascertain the aggregate value of the exports of this product, for the year, to be:

By way of New Orleans,	$11,309,972
" " " the Northern cities,	2,829,943
	$14,139,465

Making more than fourteen millions of dollars, for the exports from the West, of this one article, for the last year. We add in reference to the hogs of 1847, the current year, the following scrap from a newspaper: "Our Tax Laws require the the Assessors of the several counties, to return the number of Hogs in each county—six months old and upwards—on the 1st of June in each year. The returns have not all been made; but the Ohio Cultivator has procured and published those of sixty-one counties, by which a very safe comparison may be made.

In 61 counties 1846, - - - -	1,097,864
" " " 1847, - - - -	1,372,113
Increase in these counties, - - -	274,247

Increase twenty-five per cent!

The total number of Hogs in this State, will reach nearly one to each inhabitant, exclusive of pigs under six months old. Some counties, however, have a vastly greater proportion. For example:

Ross county, - - - - -	70,351
Butler, - - - - - - -	60,604
Pickaway, - - - - - -	50,925
Franklin, - - - - - - -	46,914
Highland, - - - - - -	44,794
Preble - - - - - - -	41,092
Warren - - - - - -	40,228
Clinton, - - - - - - -	39,592

Hamilton, - - - - - - - 38,275
Montgomery, - - - - - - - 37,581

These counties are the great corn counties of the State, in which hogs are concentrated for the purpose of feeding."

Beef is also raised extensively, and of fine quality. The beeves which are fattened on the prairies, without any other care than that of marking them, and giving them salt as often as they require it, become very fat, though not large. They seldom weigh over six or seven hundred; but the meat is remarkably sweet, juicy, and tender.

In some parts of Ohio and Kentucky, the farmers have turned their attention very successfully to the improvement of their breeds of cattle. Imported animals have been introduced at a great expense, and in sufficient numbers to have already affected a sensible improvement in the stock of large districts. In several counties of each of these states the cattle are decidedly fine, and unquestionably equal to those of any part of the United States.

Horses are raised throughout the west. In Kentucky and Tennessee, great attention is paid to the rearing of blooded horses for the turf, and the saddle, and those states abound in fine and beautiful animals of those descriptions. There are many good blooded horses also in Ohio, but more attention is bestowed here to the rearing of horses for draught. Large numbers of mules are raised in Kentucky and Missouri.

Sheep raising has been very successfully conducted, wherever it has been attempted with proper care. The sheep do not thrive on the natural pastures, nor without suitable houses to protect them from the weather.

The following extract from a letter to the author, written by Mr. George Flower, an English gentleman, whose intelligence, experience, and probity entitle his statements to entire confidence, are conclusive, upon this subject.

"When Ferdinand the Seventh was detained by Napoleon a prisoner in France, Sir Charles Stewart, then envoy from England, purchased six thousand of the finest merinos from the royal flocks of Spain. The haste with which these sheep were driven to the Spanish coast, their crowded state on board ship, and the change of climate and pasture, engendered so much disease and death, that in one year after their purchase in Spain, not more than two thousand remained alive in England. These two thousand were purchased by my father, and for four years were tended with great care and attention by me.

"During this period, I made several purchases of individual sheep from celebrated flocks belonging to the convents of Spain; and particularly from the flock of the monks of Paula.

"In 1817, I emigrated to Illinois, and settled in Edwards county, ten miles from the Wabash, in a pleasant and gently undulating prairie country. I brought with me six rams and six ewes, selected for the fineness of their wool. From these I have bred and increased, ever since. I have also bred from three hundred country ewes, by my merino and Saxony rams. The continued use of fine rams, for seventeen years, has brought the descendants from the country ewes as fine woolled as the original merinos. The flock, from their first introduction up to the present time, have been remarkably healthy. The only disease I have observed amongst them, is the foot rot; about six falling with it in the course of the year, and about the same number with the rot, from pasturing in wet places on the prairie, in the spring of the year.

"My flock now consists of four hundred sheep. Two hundred and sixty of which are ewes; two hundred of them fine woolled, and sixty common and half-blood.

"I have for sixteen years bred my sheep alone, and without any comparison with the eastern flocks, or newly im-

ported sheep from Saxony. It will be a curious fact, if it should so turn out, that the interior of America contains as fine wool as can be found in Spain or Saxony.

"Having given this brief history of the origin, and present number of my flock, I will mention a few facts relative to the cultivation of fine wool, and the new varieties of sheep now possessed by me. Some few years ago, the merino was considered the finest woolled sheep in the world. The Spanish king allowed the elector of Saxony to select a given number of sheep from his flock. The agents of the elector, selected the finest woolled animals, regardless of their form or size. From these, a race of sheep has been reared, producing extremely fine wool, but tender, small, and generally ill shaped. These have been bred so long together, that the Saxony sheep have now very different characteristics from the merino. The wool of the Saxony is twenty or twenty-five cents per pound higher than the merino. When in possession of the two thousand Spanish sheep, I examined with great care, every individual in the flock, and selected from them seventy of extreme and uniform fineness. These were kept in a little flock by themselves, and the manufacturer who purchased the merino fleeces, at a dollar per pound, in the grease, gave for the wool of the selected flock, two dollars per pound. Are there any manufacturers of shawls, or extra fine cloths, in the United States, that will give an extra price for extra fine wool? I have now five breeds of fine woolled sheep, in my flock, suitable for different soils, and whose wool is adapted for different manufactures. The merino and Saxony, both too well known to need description. The Illinois grazier, is a most useful race of sheep, perhaps more generally useful as a substitute for the common sheep of the country than any other. It is a short-legged, stout sheep, with a long-stapled soft wool, alike acceptable to the manufacturer and the housewife. It will

live and thrive on the richest as well as the poorest land. It fattens easily: its mutton is excellent. The second variety I call the prairie down, bearing a strong similarity to the celebrated breed of 'south downs,' in England, but clothed with the finest fleece. This breed is entirely without horns, and divested of the loose skin about the throat and chest, that has so much disfigured the merinos. The whole appearance of this sheep is neat, with a form sufficiently broad for easy fattening. This breed should be kept exclusively upon high ground and fine herbage."

In the neighborhood of Steubenville and Wheeling, and at several other points, sheep have been raised in large numbers, and with great success; and there remains no doubt of the adaptation of our climate to this animal.

CHAPTER XV.

The public Domain.

The *public domain*, as it is called, consists of the lands belonging to the general government, as distinguished from the unimproved lands, belonging to the individual states, or private owners. They have long occupied much of the attention of Congress, and there is reason to believe that the legislation of that body in respect to them, is likely to assume hereafter a higher importance, and a more delicate character, than it even now presents. It is only necessary to notice the fact, that in all the western states, which lie beyond the Ohio, the Union is the proprietary of the vacant lands, in order to suggest the intricate relations which are likely to grow up between the general and state governments. To those who view these questions in their probable effect upon *state rights*, the subject assumes a fearful interest; but we do not profess to be among those, nor to entertain any doubt, that the well-balanced powers of the general government, on the one hand, and of the respective states, on the other, will be maintained in their original integrity, as long as the confederacy shall endure. Nor is it our intention, in the remarks which we shall make, to advocate any local interest, or to advance the dogmas of any political sect; our object being simply to state the subject, in its various bearings, by presenting some of its most prominent details, with such information relative to the actual condition of the country, as may be properly connected with it.

In the western states, this subject has for many years presented a topic of animated public discussion. It is here a matter of vital interest, and is every year growing in influence, and expanding in magnitude; and the time is fast approaching, when political aspirants, whatever

may be their principles in other respects, will be required to be orthodox upon this all absorbing question. Yet the politicians of the west are by no means unanimous; and although the popular voice has given currency to a few leading propositions, the minds of intelligent men are much divided as to the course of policy to be pursued by the government, in the disposition of the public domain.

It should be recollected, that a very large majority of the western population, and of the emigrants to the new states, are farmers, and that very few of these are willing to be the tenants of other men. They nearly all are, or desire to become, freeholders: and as there are few other lands in market than those of government, the price and conditions of sale of the public domain, are to them topics of immediate importance.

By a calculation lately submitted to Congress by one of its committees, and founded on evidence which seems conclusive, it appears probable, that in 1860 the population of the United States will be *thirty-two* millions, of which *fourteen* millions will be contained in the Atlantic states, and *eighteen* millions in the western states. Thus the inhabitants of the Atlantic states, having now the majority in Congress, are legislating upon the interests of those, who, in less than thirty years will have acquired the right, and the power, to exercise a controling influence in the national legislature, and who, from a dependent condition, will have arisen to complete sovereignty. Where the population of a country is thus rapidly increasing—where that increase tends inevitably to a transfer of power from one section of the Union to another—and where the anticipated change is so near at hand, that individuals of the present generation may live to witness its accomplishment, every measure which bears upon the subject becomes deeply interesting. Of such measures, those which relate to the sale and ownership of the public lands, seem to have the most direct

operation upon the growth of the new states and territories, a very large majority of the emigrants to such countries, being agriculturalists, who would not settle upon the soil in any other condition than as its proprietors.

It will be readily seen that this is precisely the kind of subject which is calculated to awaken sectional feelings, and upon which, therefore, a great diversity of opinion may prevail. That discordant ideas concerning it are prevalent, is becoming every day more and more obvious; and the public domain is now viewed in different lights by different politicians. Some consider it as a source of revenue, to be disposed of to the best advantage for the national treasury; others contend that it should be put to sale in the manner best calculated to promote emigration to that quarter; a third class, and the most numerous, are willing to make a liberal compromise between the two former opinions; while a fourth, few in number, deny the right of the United States to the fee simple of any lands lying within the limits of a sovereign state.

The subject, therefore, naturally divides itself into two branches of inquiry;—1. As to the title of the United States to the public lands; and 2. As to the policy pursued in its disposal.

1. *The title of the United States to the public lands.*

At the formation of the Federal Government, all the lands not owned by individuals, belonged to the states respectively, within whose limits they were situated; for as that government consisted of a confederacy of states, each of which retained its proprietary rights, and proper sovereignty, the United States acquired by the Union no property in the soil. The uninhabited wilds lying to the west, and as yet not clearly defined by established boundaries, were claimed by the adjacent states, and portions of them by foreign nations under conflicting claims, but all subject to the paramount Indian title. The title there-

fore, of the United States to that country is derived: 1. From treaties with foreign nations; 2. From treaties with the Indian tribes; and—3. From cessions by individual states, members of the Union.

The treaties with foreign nations, by which territory has been acquired, are those of 1783 and 1794 with Great Britain, of 1795 and 1820 with Spain, and of 1803 with France. It is sufficient to say of these treaties, that by them we acquired Louisiana and the Floridas, and extinguished all the claims of foreign nations to the immense regions lying west of the several states, and extending to the Pacific ocean.

The lands east of the Mississippi, and contained within the boundaries designated by the treaty with Great Britain of 1783, were claimed by individual states, and the title of the United States to that territory is derived from cessions made by those states.

These cessions embrace three distinct tracts of country.

1. The whole territory north of the river Ohio, and west of Pennsylvania and Virginia, extending northwardly to the northern boundary of the United States, and westwardly to the Mississippi, was claimed by Virginia, and that state was in possession of the French settlements of Vincennes and Kaskaskia, which she had occupied and defended during the revolutionary war. The states of Massachusetts, Connecticut, and New York, set up, to portions of the same territory, claims, which though scarcely plausible, were urgently pressed upon the consideration of Congress. The United States, by cessions from those four states, acquired an indisputable title to the whole. This tract now comprises Ohio, Indiana, Illinois, and Michigan.

2. North Carolina ceded to the United States all her vacant lands lying west of the Allegheny mountains within the breadth of her charter. This territory is comprised within the state of Tennessee.

3. South Carolina and Georgia ceded their titles to that tract of country which now composes the states of Alabama and Mississippi.

The United States having thus become the sole proprietary, of what have since been called the public lands, the nation was rescued from evils of the most threatening and embarrassing aspect. The claims of foreign nations, adverse to our own, to the broadly expanded regions lying west of the several states, and extending to the Pacific, were extinguished—depriving those nations of all excuse for tampering with the Indians upon our border, and rescuing our frontier from the dangerous vicinity of foreign military posts. The boundaries of the then frontier states were defined, and they were prevented from growing to an inordinate size, and acquiring an undue preponderance in the government—the interfering claims of several states to the same territory were silenced—but above all, the general government, in acquiring the sole jurisdiction over the vacant lands, was enabled to establish an uniform system for their settlement, and the erection of new states. To the latter, admission into the Union upon terms of perfect equality with the older members of the confederacy, was secured; while the land was offered to the settler at a fair price, and under an unexceptionable title. The disinterested policy of the states which made these liberal cessions cannot be too highly applauded. Virginia, in particular, displayed a magnanimity which entitles her to the lasting gratitude of the American people; her territory was by far the largest, and her sacrifice to the general good the noblest. It was disinterested, because she reserved no remuneration to herself.

The cession by Virginia is the most important, not only on account of the magnitude of the country ceded, but in regard to the conditions imposed on the United States respecting its future disposition. It is provided in that

compact, "that all the lands within the territory so ceded to the United States, and not reserved for special purposes, shall be considered as a common fund, for the special use and benefit of such of the United States as have become, or shall become, members of the confederation or federal alliance of said states, Virginia inclusive, according to their usual respective proportions in the general charge and expenditure, and shall be faithfully, and *bona fide* disposed of for that purpose, and for no other use or purpose whatsoever." It is also provided, that, "the said territory shall be divided into distinct republican states, not more than *five*, nor less than *three*, as the situation of that country and future circumstances may require; which states shall hereafter become members of the Federal union, and have the same rights of sovereignty, freedom and independence, as the original states."

The reservations made by Virginia, were, "That the French and Canadian inhabitants, and other settlers of Kaskaskies, St. Vincents, and the neighboring villages, who have professed themselves citizens of Virginia, shall have their possessions and titles confirmed to them, and be protected in the enjoyment of their rights and liberties," and a quantity of land, which Virginia had promised to General George Rogers Clarke, and to the officers and soldiers who served under him in the reduction of the French posts, was reserved within the ceded territory, for the purpose of fulfilling the stipulations of that agreement. This cession was made in 1784.

As we shall comment upon the Ordinance passed by congress in 1787, for the government of the northwestern territory, in another place, we shall only notice here, that part of it which relates to the public lands. It is comprised in the two following clauses:

"The legislatures of those districts, or new states, shall never interfere with the primary disposal of the soil by the United States, in congress assembled, nor with any

regulations congress may find necessary, for securing the title in such soil to the *bona fide* purchasers."

"No tax shall be imposed on lands the property of the United States; and in no case shall non-resident proprietors be taxed higher than residents."

In the constitution of the United States, it was further declared, that, "The congress shall have power to dispose of, and make all needful rules and regulations respecting the territory or other property of the United States;" and thus the sanction of the whole people was given to the acts of the confederated government, and their compacts with states, and the title of the general government to the public lands, recognised.

The treaties with the Indian tribes, for the extinguishment of their titles to different tracts of country, have been numerous. Those tribes are recognised, in some respects as independent nations. They are governed by their own laws, and are acknowledged to have the right to sell their lands, or to occupy them at their option. The general government claims the right of pre-emption, and forbids the sale of Indian lands to other nations, or to individuals. But in no instance have those lands been surveyed, or offered for sale, antecedently to their purchase from the Indians, nor has any compulsion ever been used, to extort from the latter, any portion of their territory. In several instances, the same land has been purchased from several different tribes, in others, it has been bought more than once from the same tribe, so liberal has this government been in its policy, and so careful to avoid even the appearance of injustice.

No portion of the Indian lands has ever been claimed by our government, under the usages of war. The treaty of Greenville, made by General Wayne in 1795, at the head of a victorious army, with the chiefs of the tribes who had just before been vanquished by him in battle, is one of the first in date, in reference to the public domain,

and affords sufficient evidence of the early adoption of a pacific and just policy by our government. Nothing is claimed in that treaty by right of conquest. The parties agree to establish perpetual peace—the Indians acknowledge themselves to be under the protection of the United States, and not of any foreign power—they promise to sell their land to the United States only—the latter agrees to protect them, and a few regulations are adopted to govern the intercourse which shall ensue. A boundary line is established by which the Indians confirm to us large tracts of land, nearly all of which had been ceded to us by former treaties; and the United States agrees to pay them in goods to the value of $20,000, and to make them a further payment of $9,500 annually. Most of the treaties subsequently made, have been framed on this model.

In the year 1803, President Jefferson in a letter to the Governor of Indiana, makes use of the following language: "Our system is to live in perpetual peace with the Indians, to cultivate an affectionate attachment from them, by every thing just and liberal we can do for them, within the bounds of reason, and by giving them effectual protection against wrongs from our own people." The system thus early adopted, has been invariably pursued; however the views of the government may have been misunderstood, or the faith of treaties violated, by individuals, the action of congress and of the cabinet, in the extinguishment of Indian titles, has been benevolent and uniform. The legislation of some of the states, has been less equitable, and should not be confounded with that of the general government.

As a considerable part of the country which is now held by the United States, as public lands, had been subject to several foreign powers successively, portions of it were claimed by inhabitants and others, either by right of occupancy, or by titles said to be derived from those several governments, or from the local authorities acting under

them. To investigate such claims, boards of commissioners have been appointed by various acts of congress, to act within the several territories, whose powers and duties have been modified according to the nature of the claims to be examined before them; some having final jurisdiction, while others were only authorized to investigate and report the facts, with their opinion. But the intention of the government, seems uniformly to have been to guard against imposition—to confirm all *bona fide* claims derived from a legitimate authority, even when the title had not been completed—to allow claims founded on equitable principles—and to secure in their possessions all actual settlers, who were found on the land when the United States became the proprietary of the country in which it was situated, although they had only a right by occupancy.

So far then as a title by purchase could be gained, that title has been acquired by the Federal Republic. She has extinguished every title which could be possibly set up, as adverse to her own; namely, those of foreign nations, those of the Indian tribes, and those of such states as possessed or alledged them; and she has confirmed to individuals, every acre to which the plausible shadow of a right could be shewn, either in law or equity.

The validity of those purchases, or of the rights acquired under them, has never been disputed; but since the acquisition of that territory, portions of it have been erected into separate states, which have been admitted into the Union, and it has been contended in Congress, and elsewhere, that by the act of admitting a state into the Union, the government forfeits her claim to the unsold lands within the boundaries of such state. It is argued that under the laws of nations, "*the sovereignty of a state* includes the right to exercise supreme and exclusive control over all the lands within it"—that, "the *freedom of a state*, is the right to do whatever may be

done by any nation, and particularly includes the right to dispose of all public lands within its limits, according to its own will and pleasure"—and that sovereignty and freedom are inseparable from the condition of an independent state. It is urged, that the original states possess supreme and exclusive control over the lands within *their* limits, and that the new states being by compact invested with "the *same* rights of freedom, sovereignty, and independence, with the *other* states," the right to dispose of the soil is among the attributes of sovereignty thus guarantied to them. It is contended that the Federal Government cannot hold lands within the limits of a state, because that power has not been expressly given by the Constitution, except in the case of "places purchased by the consent of the legislature of the state in which the same shall be, for the erection of forts," &c.; and that the power of disposing of the soil, not being given, is reserved to the states respectively. That section of the Constitution which declares that "Congress shall have power to dispose of and make all needful rules respecting the territory, or other property belonging to the United States," is said to be "clearly adapted to the territorial rights of the United States, beyond the limits or boundaries of any of the states, and to their chattel interests," and therefore not applicable to this question.

The objections thus raised were ingenious, and the immense magnitude of the rights and value of the property involved, gave them for the moment a serious and imposing aspect. But it was easily discovered on examination, that they were unsound and merely specious. The claim thus set up for the new states found few advocates. On the floor of Congress its existence was brief, its death sudden, its fate unlamented. In the public prints it was scarcely noticed, except to be briefly disapproved. Notwithstanding its *ad captandum* character, it failed to become popular, even in the country where it originated.

An objection which seems not to have occurred to its authors, was too obvious to escape the common sense of a people, alive to their own interests, and intelligent in all that concerns their rights. The government has the same title, and neither more nor less, to the unsold lands in the several states, which she had at the moment after the admission of those states into the Union. If her title is defective now, it was equally so at that time; and every sale made in any new state since its admission, is illegal. The great mass of land titles in the new states, would, by the admission of this doctrine, become unsettled. Of the million of inhabitants of Ohio, a vast proportion of the freeholders would become intruders on public land. The people are too intelligent to submit to such an outrage, the states too just to open a door for the ingress of such a flood of misery, confusion, and fraud, as would sweep over the land in the event of a consummation so devoutly to be deprecated. It is a singular coincidence, and one perfectly conclusive, of the little faith reposed by any in this claim, that the legislatures of those states, which have wholly or partially sanctioned this doctrine, have invariably, at the same sessions, distinctly denied it in their acts of ordinary legislation, by the passage of laws recognising "the lands of the United States" *eo nomine*, by the adoption of memorials to Congress, asking for grants, and by various other substantive recognitions, both direct and incidental.

It is obvious too, that if this question can be said to have now any definite existence, its importance must be hourly decreasing. Every acre of land that is sold, diminishes the amount in controversy, and every creation of a freeholder adds to the number of its interested opponents. It may not however be uninteresting to state a few of the points which are very properly urged against this singular claim.

The cessions by Virginia and the other states, were

made antecedently to the adoption of the Federal Constitution; and having been ratified in the manner prescribed by the articles of confederation, the title vested in the United States was valid, for the purposes expressed in the several deeds of cession. The Federal Constitution having been subsequently adopted, the clause giving to Congress the "power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States," must have had reference to the *territory* and *other property then held*, and of course, vested in Congress the power to dispose of the lands in question, and to make all needful rules and regulations respecting them. When, therefore, the people inhabiting those territories applied for admission into the Union, it was competent to Congress, having power to legislate on the subject matter, to make conditions reserving her own proprietary rights. Such conditions were made with all the new states, as will be seen by inspecting their several constitutions. Those constitutions were submitted to Congress for its ratification, and of course have the binding effect of compacts, as between the parties. In all of them, the proprietary character of the United States, is distinctly recognised, large quantities of land are transferred by the United States, to the states respectively, for specific purposes, and accepted by the latter, and equivalents reserved to be paid to the United States in return. Subsequently to their admission into the Union, all of those states have been applicants to Congress for *donations* of land lying within their respective limits, and all of them have received large grants of such land.

It may be remarked also, that the laws of nations have no binding effect as between the members of a confederacy, or as between a confederated nation and one of its members, when those laws come into conflict with the internal policy, statutes, or compacts of such nation. Every

nation has a right to regulate its own affairs, and to govern, or to make compacts with, its own members, without respect to the laws of nations, which could in such cases, only be appealed to, where foreign states, not parties to the laws or compacts so made, should be affected by them. Whatever, then, might have been the situation of those lands under the laws of nations, if no legislation had taken place respecting them, a widely different case is presented, when, by solemn acts, by express laws, and long acquiescence, the proprietary rights of the parties have been clearly settled, and distinctly recognised.

It is understood, that the United States can assume no sovereignty over any of the new states, or over her lands within such state, other than such as is strictly proprietary. Her title gives her no civil jurisdiction. She can claim no taxes, exact no obedience, other than she may demand from the citizens of all other states. She simply holds her property, with the right to sell and convey the same at her own pleasure, and with power to make needful rules and regulations for its disposition. The freedom, sovereignty, and independence, of the New States, are therefore not infringed; and if it be admitted that the right to dispose of the soil within its limits be incident to the sovereignty of a state, it is replied, that such right applies only to waste, unoccupied or vacant land, and that our states cannot exercise such a power over lands, which before their admission into the union, were held in fee simple, by the United States, or by individuals. It is not denied that the title of the United States, as originally acquired, was a good one; that those who have purchased from her, lands within the limits of a state, previously to the erection of that state, hold titles equally valid; and that those titles cannot now be modified, narrowed, or abrogated, by any legislation. Suppose, then, that previous to the admission of any one of the new states into the union, the United States had sold to an

individual, all her land remaining undisposed of within the limits of a state so about to be admitted, would not that sale have been valid? would not the title of the purchaser of a thousand of tracts, have been as indefeasible as that of the buyer of a single tract? would the admission of the state into the union, have affected the property of any such purchaser? If these propositions be answered in the manner in which we suppose they must be, it is difficult to perceive how or why the United States, having the privilege to sell or retain her own undisputed property, should by electing to hold it, be thereby placed in a worse situation than her grantee would have occupied had her election been different.

It is further urged, that the territory alluded to, was purchased with the treasure of the United States, that it has been protected, surveyed, and brought into market at the expense of the nation, and that by the express stipulations of the cessions from the several states, that territory was set apart "as a common fund for the use and benefit of" all the states, "according to their usual respective proportions in the general charge and expenditure." There was therefore a consideration given for the lands, and an use specifically reserved; the states subsequently admitted became parties to this as well as to all other public treaties, compacts, and laws, of the union; and they accepted the territory allotted to them respectively for the exercise of their state sovereignty, subject to its encumbrances.

Other arguments have been used, in reference to this subject which we think it needless to repeat. Some of them are founded on considerations of expediency rather than of right; and many of them appeal to sectional prejudices and local interests, which we have studiously abstained from bringing into view; preferring to narrow down our abstract into a naked statement of such prominent facts and suggestions as may place before the reader

the leading features of this inquiry. We proceed therefore to consider:

2. *The policy adopted by the government in the disposal of the public domain.*

In 1787 the Ohio company purchased a large tract from congress; which body having adopted no system for the sale of lands, or the settlement of the western country, seemed disposed to favour the mode of parceling out her wide domains in extensive grants. The purchase of the Ohio company comprehended one million and a half of acres. Joel Barlow was sent by them to Europe to sell these lands; and to facilitate his operations a subordinate company was formed, called the Sciota company, to whom the lands were conveyed. Mr. Barlow made considerable sales to individuals and companies in France, and many emigrants came to this country, who would have been ruined by the bad faith of the company, had not the government generously interfered in their behalf.

In 1789, Mr. John Cleves Symmes contracted with congress, for the purchase of a million of acres of land between the great and little Miami; but in consequence of a failure on his part, to make the stipulated payments, did not become the proprietor of so large a tract, the patent which finally issued to him and his associates, included only 311,682 acres, of which only 248,540 became private property; the remainder consisting of reservations for a variety of public purposes, chiefly for the use of schools and the support of religion.

The remark that occurs to us most forcibly, in revert ing to this portion of history, is the improvidence of con gress, in making so large a grant of lands to individuals Happily for the country, the instances of such extensive grants were few; and it is perhaps equally matter of congratulation, that they did not, in any instance, yield to the individuals concerned in them, advantages sufficiently great, to render the applications for such monopolies nu-

merous or influential. It is, perhaps, chiefly in consequence of this fact, that the evil was avoided; for it does not appear, that congress was at first aware of the calamitous results which must have followed the parceling out of this noble region to a few wealthy proprietors, whose interests would often have been hostile to those of the people. This principle, however, was not at first understood. We can easily see why the foreign sovereignties, under whose sway we were originally placed, should have made, as they frequently did, extensive grants of land to individuals or companies; but it is a little singular, that our own government should have fallen into the same misguided policy. The earliest law passed by congress, for the sale of the lands of the United States, provided for its disposal to purchasers in tracts of four thousand acres each; and did not allow the selling of a smaller quantity, except in case of the fractions created by the angles and sinuosities of the rivers. The law was highly unfavorable to actual settlers, as it prevented persons of moderate property from acquiring freeholds; and would have enabled persons of wealth to become proprietors, and to sell the land to the cultivator at exorbitant prices, or else have forced the latter to be tenants under the former. With the notions that many of our statesmen had derived from Great Britain, and which notwithstanding the recent rupture of our connection with that country, still remained impressed upon us, with all the force of education and association, it is perhaps not surprising, that they should have deemed it advantageous to create a landed aristocracy; but it is more probable, that the error arose from accident and carelessness. It is curious, however, to look back at these first awkward attempts at republican legislation, and to see how gradually we shook off the habits of thought in which we had been trained, and how slowly the shackles of prejudice fell from around us.

In a report of Mr. Hamilton, Secretary of Treasury, dated July 20, 1790, he advises, the following system:—

That no land shall be sold except such in respect to which the titles of the Indian tribes shall have been previously extinguished.

That a sufficient tract shall be reserved and set apart for satisfying the subscribers to the proposed loan, in the public debt, but that no location shall be for less than 500 acres.

That convenient tracts shall from time to time be set apart for the purpose of locations by actual settlers, in quantities not exceeding, to one person, 100 acres.

That other tracts shall from time to time, be set apart for sales in townships of ten miles square, except where they shall adjoin upon a boundary of some prior grant, or of a tract so set apart, in which cases there shall be no greater departure from such form of location than may be absolutely necessary.

That any quantities may nevertheless be sold by special contract, comprehended either within natural boundaries, or lines, or both.

That the price shall be 30 cents per acre to be paid either in gold or silver, or in public securities, computing those which shall bear an immediate interest of 6 per cent, as at par with gold and silver; and those which bear a future or less interest, if any, shall be at a proportional value. That certificates issued for land upon the proposed loan shall operate as warrants within the tract or tracts which shall be specially set apart for satisfying the subscribers thereto, and shall also be receivable in all payments whatever for lands by way of discount acre for acre.

That no credit shall be given for any quantity less than a township of ten miles square, nor more than two years credit for any less quantity.

That in every instance of credit, at least one quarter

part of the consideration shall be paid down, and security other than the land itself, shall be required for the residue. And that no title shall be given for any tract or part of a purchase, beyond the quantity for which the consideration shall be actually paid.

That all surveys of land shall be at the expense of the purchasers or grantees.—

The first step towards a change in that objectionable system, which contemplated sales in large tracts, and on credit was the passage of the act of the 10th of May 1800, which provided for the sale of land in sections and half sections. Previous to that time no more than 121,540 acres had been sold, in addition to the sale to Symmes: namely, 72,974 acres, at public sale in New York in 1787, for $87,325, in evidences of public debt; 43,446 acres, at public sale at Pittsburgh in 1796 for $100,427; and 5,120 acres at Philadelphia in the same year, at two dollars per acre.

The plan of selling land in sections and half sections, the former of 640 acres, and the latter of 320 acres, was first proposed in congress, by General William H. Harrison, when a delegate from the northwestern territory, in 1799, and produced a sensation which shewed how little mature thought had been bestowed on the subject in that body. The law was certainly one of the most beneficial tendency; and its passage constitutes an epoch in the history of this country, of perhaps greater magnitude and interest than any other in our annals; for no act of the government has ever borne so immediately upon the settling, the rapid improvement, and the permanent prosperity of the western states. The ordinance of 1787, is justly regarded as an instrument of vast importance, and singularly propitious consequences; but in its practical operation and salutary results, it sinks in comparison with the system of selling the public domain, which has placed the acquisition of real estate within the reach of the labor-

ing classes, and rendered the titles to land perfectly secure. It is understood, that this act was not the exclusive production of General Harrison; the discriminating genius of Mr. Gallatin, then a member of congress, was also employed in its production; and although the earnest request of that distinguished citizen, and the circumstances of the moment, forced Mr. Harrison to submit to the credit of being its sole author, the natural ingenuousness of the latter, induced him, subsequently, when he could do so with propriety, to explain his own part in the proceeding, and to give Mr. Gallatin the honor due him. The bill was warmly attacked by some of the ablest men in the lower house. Mr. Harrison defended it alone; he exposed the folly and iniquity of the old system; demonstrated that it could only result to the benefit of the wealthy monopolist, while the hardy and useful population, which has since poured into the fertile plains of Ohio, and made it, in thirty years, the *third* state in the Union, must have been excluded from her borders, or have taken the land on terms dictated by the wealthy purchasers from the government.

In 1802 a convention was held at Vincinnes, of which General Harrison was president, at which a petition was adopted, praying of congress, that a provision of one 36th part of the public lands within the territory of Indiana, be made for the support of schools within the same; and on the 2nd of March succeeding, Mr. Randolph, the chairman of a committee to whom this subject was referred, made a favorable report. This was the commencement of our beneficent system for the support of public schools.

As early as 1803, petitions were presented to congress praying for various improvements or changes in the mode of selling lands, among which the most prominent suggestions were, To sell the land in smaller tracts—to charge no interest on sales—to sell for cash—to reduce

the price—and to make grants of small tracts to actual settlers.

On the 23d January 1804, a report was made in the House of Representatives, recommending the reduction of the size of the tracts, and the sale of quarter sections in the townships which had before been offered in half sections, and the sale of half sections in those which had been offered in whole sections.

The present admirable system of selling the public lands, may be dated as having commenced with the act of May 10, 1800, though several important improvements have been made since that time. It is not necessary to notice all these changes. All the lands within each district, are surveyed before any part is offered for sale; being actually divided into *townships* of six miles square, and each of these subdivided into thirty six *sections* of one mile square, containing six hundred and forty acres each. All the dividing lines run according to the cardinal points, and cross each other at right angles, except where fractional sections are formed by large streams, or by an Indian boundary line. These sections are again divided into *quarter*, *half quarter*, and *quarter* quarter sections, containing 160, 80, and 40 acres respectively, of which the lines are not actually surveyed, but the corners, boundaries, and contents, are ascertained by fixed rules prescribed by law. This branch of business is conducted under two principal surveyors, who appoint their own deputies. The sections in each township are numbered from 1 to 36, the townships are placed in ranges, and also numbered. The surveys are founded upon a series of true meridians; the *first principal meridian* is in Ohio, the second in Indiana, the third in Illinois, &c., each forming the base of a series of surveys, of which the lines are made to correspond, so that the whole country is at last divided into squares of one mile each, and townships

of six miles each, and these subdivisions arranged with mathematical accuracy into parallel ranges.

This system is as simple, as it is on several accounts peculiarly happy. Disputes in relation to boundaries can seldom occur where the dividing lines can be at all times corrected by the cardinal points; where the same line being extended throughout a whole region, is not dependent on visible marks or corners, but can readily be ascertained at any moment, by calculation and measurement; and where one point, being ascertained, furnishes the basis for an indefinite number of surveys around it. Such lines too, are easily preserved, and not readily forgotten.

A vast deal of accurate and useful information is furnished to the public through the medium of this system. The whole surface of the country is actually surveyed and measured. The courses of the rivers and smaller streams are accurately ascertained and measured, through all their meanders. Our maps are therefore exact, and the facilities for measuring distances remarkably convenient. Many of the peculiarities of the country are discovered, and its resources pointed out, in the course of this minute exploration; and a mass of well authenticated facts are registered in the proper department, such as the topographer can find in relation to no other country.

After the land has been surveyed, districts are laid off, in each of which a land office is established, and on a day appointed by the President, the whole of the land is offered at public sale, to the highest bidder; but not allowed to be sold below a certain *minimum* price. Such tracts as are not sold at that time, may at any time afterwards, be purchased at the *minimum* price, at private sale.

From all the sales, one *thirty-sixth* part of the land, being one entire section in each township, is reserved, and given in perpetuity for the support of schools in the township; section No. 16, which is nearly central in

each township, is designated by law, for that purpose In each of the new states and territories one entire township, containing 23,040 acres, (and in some instances two townships) has been reserved, and given in perpetuity to the state, when formed, for the support of seminaries of learning of the highest class. Five per cent. on the amount of the sales of land within each state, is reserved three-fifths of which is to be expended by Congress in making roads leading to the state, and two-fifths to be expended by such state in the encouragement of learning. All salt springs, and lead mines, are reserved, and leased by the government, but many of these have since been given up to the states.

The lands reserved for schools and seminaries of learning, have never been considered as gratuitous grants to the states receiving them; each of these states having made ample remuneration to the general government. Illinois, for example, agreed that all lands sold by the United States, within that state, should remain exempt from taxation for five years after such sale, and that lands granted for military services, should remain exempt from taxation for three years, if held so long by the patentees. The taxes thus relinquished by that state, will have amounted, when all the lands in its limits shall be sold, to near a million of dollars.

The business of the land office, in each district, is transacted by a Register, and a Receiver, by the first of whom the land is sold to individual purchasers, while the other receives the money. These officers are entirely independent of each other, their duties distinct, and their responsibilities separate. They are required to keep similar books of account, and to make respectively, periodical reports to the General land office at Washington —the one of his sales, the other of his receipts; so that the offices operate as checks on each other; and as neither has any pecuniary interest in the fidelity of the other,

there is no temptation to collusion. They each keep plots of all the land in their district, sold or unsold, on which each tract is distinctly marked and numbered, so that the purchaser in making his selection may examine for himself. No discretion is vested in the land officers, in reference to the sale : the purchaser having selected his tract, or as many tracts as he may desire, they have simply to discharge the ministerial duty of receiving the money, and granting the evidence of title.

Previous to the year 1820, the price demanded by government for its land, was two dollars per acre, one fourth of which was paid at the time of purchase, and the remainder in three equal annual instalments ; a discount of eight per cent. being allowed to the purchaser, if the whole was paid in advance. This arrangement, however liberally intended, was found to be productive of great mischief. The relation of debtor and creditor, can never be safely created, between a government and its citizens. If the citizen is creditor, his demands are as exorbitant, as his power to enforce payment is inefficient, and the claim which should be made to the justice, becomes an appeal to the generosity, of the debtor. If the government is creditor, the moral obligation to pay, is lightly felt, and the legal obligation leniently enforced. The debtor expects indulgence, and makes his contract under that expectation. He enters into an engagement with less circumspection than he would use if dealing with an individual, under the belief that he will not find in the government a rigid creditor ; and under the same conviction neglects to make any strenuous exertion to comply with his contract. The selling of the public lands, therefore, on a credit, was shewn by experience to be unwise. The country was new, the soil fine, and the spirit of emigration active. Large purchases were made by individuals, who had not the means of payment. Persons who had only money enough to pay the first instalment on one or

more tracts, disbursed their whole capital in making the prompt payment required at the time of entry, depending on future contingencies for the power to discharge the other three-fourths of their liabilities. This was done, in most cases, without the least intention to defraud; the risk of loss being entirely on the side of the purchaser, and the allurement to make the venture, such as few men have the resolution to withstand. A rapid increase in the value of lands was generally anticipated, and many expected to meet their engagements by selling a portion of the land at an enhanced price, and thus securing the portion retained; some were enticed by a desire to secure choice tracts, and others deluded by the belief that they could raise the sums required, within the appointed time, by the sale of produce made on the soil. A few, by industry, or by good fortune, realised these anticipations, but a great majority of the purchasers, at the expiration of the term limited for the payment of the last instalment, found their lands subject to forfeiture for nonpayment. Instead of rising, the price of land had fallen, in consequence of the vast quantities thrown into the market; and the increase in the amount of produce raised, so far exceeded the increase of demand for consumption, that the farmer was unable to realise any considerable profit from that source, while the expenses of clearing and improving his farm required both labor and money. Money was scarce, the country was new, without capitalists, moneyed institutions, or manufactures, and with little commerce; and while the sale of lands, and the importation of foreign goods, required to supply the wants of the people, constituted an immense and an eternal drain of the circulating medium, across the mountains, the industry of the people was not yet brought into action, nor the resources of the country developed, to a sufficient extent to afford the means of bringing the money back. Ours was a population of buyers. The demand for

money induced the establishment of local banks, whose notes were at first eagerly taken, but soon depreciated, having the usual effect of driving better money out of circulation, without substituting any valuable medium in its place. Bank debts were added to land debts.

This state of things existed chiefly from 1814 until 1820. Previous to the former period, the war had created an unnatural excitement, unusual expenditures were made, and activity was given to some branches of business; and it was to sustain the business which had grown up during the war, that local banks were created. The most of these banks were authorised to commence business when one-fifth of their nominal capital had been paid in; which provision, liberal as it was, was not strictly complied with—the same specie being used for several banks, and only remaining in the vaults of each sufficiently long to enable the proper officers to certify that the requisitions of the law had been observed. A period of distress occurred which reached its lowest point of depression in 1819.

The whole population trembled upon the brink of ruin; and had the federal government proved a rigid creditor, this extensive and beautiful country must have presented a vast scene of desolation. The purchasers of land had become settlers; they had built houses and opened fields upon the soil, the legal title to which remained in the government. A few could have saved their homes by the disposal of other property; the many could not purchase the roof that sheltered them, at any sacrifice which they might have been willing, or perhaps able, to make. Yet it is not to be inferred that the people were destitute, or desperately poor; far from it—they were substantial farmers, surrounded with all the means of comfort and happiness—except *money*. To have driven such a people to extremity, would have been ungenerous and fatally unwise; for now that the crisis has passed, we may say

without offence or danger, that there is no calculating the extent of the private misery, and the public convulsion, which such a policy would inevitably have produced. The enlightened statesman, (Mr. Crawford,) who at that time presided over the Treasury department, saw, and properly estimated the wants and feelings of that part of the community, together with the relative duty of the government. A system of relief was devised, which, by extending the time of payment, and authorising purchasers to secure a portion of their lands by relinquishing the remainder to the government, in the course of eight years extinguished a large portion of those debts, and has eventually, it is believed, absorbed the whole, without injury to the citizen, and with little loss to the government.

This subject affords a theme of proud felicitation to the American patriot, as it exhibits an evidence of the permanency of our institutions. It is not easy to imagine a crisis more perilous than the one to which we have alluded. It is dangerous to threaten a high spirited people with expulsion from their homes; and the law which forfeited the lands of the western people upon the non-performance of their contracts, held out this alternative. But under these appalling circumstances, not a shadow of disaffection was exhibited in the west; the people neither threatened nor murmured, but looked up to their government for relief, with a confidence which remained unshaken to the last. They retained their loyalty and their temper, petitioned Congress in an independent tone, and awaited the result with manly firmness. From the debates on this subject in Congress, no one would have guessed the magnitude of the interests at stake, or the powerful and intense feelings of anxiety enlisted in the discussion. The deportment of all the parties was as temperate, as the decision was just and judicious.

Upon granting relief to the land purchasers, the credit

system was abolished; and lands are now sold by the government at one dollar and twenty-five cents per acre, payable in cash. This plan has had a more wholesome operation; and the only difference which now exists, has reference to the price of land. To this two objections have been made; 1st, that the same price is demanded for all lands, without respect to the endless diversity of value occasioned by differences of soil and situation: and 2nd, that the price is in all cases too high.

That the first is a valid objection, is indisputable; but it is not easy to suggest a remedy less objectionable. To divide the land into classes, varying in their actual value, as well as in price, would perhaps be impracticable. Under such a system, there must be an actual inspection of each separate tract, the cost of which would often exceed the value of the land. The persons appointed to make such valuation must be numerous, and each would have a separate standard of his own, by which to estimate the advantages and disadvantages of soil, climate, position, &c., which the various tracts of land would present. An endless scene of confusion would ensue. There would be diversities of price, without any corresponding diversities of value. An imaginary value would be given to one tract, while another would be unreasonably depreciated. The person who wished to purchase would think that an exorbitant price had been attached to the spot selected by him; while the man who had already bought, would conceive that his own lands were reduced in value by the low estimate affixed to those adjoining him; some would think that emigration into the neighborhood was checked by having the lands underrated and brought into discredit, while others would imagine that it was prevented by high prices. Above all, to the multitude of agents intrusted with this delicate task, there would be opened a field for speculation, so vast, so tempting, and so fraught with injury to the government and to individuals, that no

supposed advantages to be anticipated from such a scheme could compensate for its dangers.

Another plan proposed is, to reduce periodically the price of the lands that have been culled. Thus, at the opening of a district, the land should be sold at one dollar and a quarter per acre; after a term of three or five years, the price should be reduced to one dollar; at the expiration of another term, another reduction would occur in the price, and so on. It is supposed that the choice lands would sell during the first term; that during the second they would again be culled, and the best of those remaining unsold would be taken at the reduced price; and that in each successive term a portion would be sold, until the whole should be disposed of, at prices somewhat proportionate to their value. The objection made to this plan is, that it would impede the sales of land, by holding out an inducement to persons proposing to purchase, to wait from term to term for the reduction of price. We do not think this objection well founded. Such delay on the part of purchasers would occur to a certain extent, but not to a degree to be compared with the advantages anticipated by this change. The farmer who had selected a choice tract of land, would not for three or five years run the daily risk of losing it, to save forty dollars. The probability is, that although in the first term the sales might be, to a very small amount, decreased, they would in the second and third terms be greatly swelled, and that on the whole, the lands would be sold more quickly, and to better advantage, than under the present system.

The plan of graduating the price of land, in the manner described, was introduced, in Congress, and has been most zealously advocated, by Col. Benton, of Missouri. It is recommended by its good sense, and practicability, and has been more favorably received by the population of the new states, than any other modification that has

been suggested. The opposition to it in Congress, which has prevented its adoption has probably been excited, in part, by the prominent position which its able author has occupied as a party leader, and which has rendered this salutary measure an object of partizan warfare. It will, in all probability, be eventually engrafted upon the existing system, and will have the effect of concentrating the population, which has now a tendency to flow towards the extreme frontier, by offering advantages to purchasers in the older land districts, somewhat commensurate with those held out in the new.

In support of the opinion that the established price of the public lands is too high, some plausible reasons have been urged. Admitting the fact that the Federal Republic has the undisputed title to the soil, it does not follow, that she has the right to dispose of it upon her own terms, or to retard its settlement by the imposition of unreasonable restrictions. Holding it in her national character, it is held to the use of the people of the United States, and for the purpose of being settled, and erected into states. With regard to a large portion of this country, the erection of states was a condition express, and with respect to the remainder, the same condition is implied. Congress, therefore, is bound to throw the land into market upon reasonable terms; and while it is her duty not to entice population from other sections of the Union, it is equally her duty not to retard emigration to this. The national legislature should not be a mercenary vender of property *for gain*. The public land should be sold at its exact value—at the price which the people are willing and able to give for it.

That the present price of land is higher than the people can afford to give, has been suggested by a reference to facts, which seem to support this idea. Let us take for example the state of Illinois, which is situated in a temperate latitude, has a healthy climate, is surrounded with

navigable streams, and has more arable land within its boundaries, than any other state in the union. It has no manufactories, little trade, few towns, and none of those of the larger class, and but few professional men. The people are agriculturalists, all of whom would, if they were able, own one or more tracts of land, and all of whom ought, in good policy, to be encouraged in their desire to possess the land they till. The whole quantity of land sold in this state, up to July 1828, was little over one million of acres, which divided into tracts of 160 acres, will give seven thousand such tracts—we throw off the fractions. The number of votes *actually given* at the election in August in the same year, was nearly seventeen thousand; and supposing that one man in every eighteen did not vote, we may set down the number of persons entitled to suffrage, at eighteen thousand. Those who know the habits and character of that people, will agree, that leaving out the villages and the professional men, nearly all the rest of the voting population are *farmers upon their own account*, and are, or wish to be, freeholders. Supposing then that the land sold, had been equally distributed, the number of tracts ought nearly to correspond with the number of voters. Yet the difference is as 7 to 18; and when it is added, that many farmers own more than one quarter section, that there are men in that state who own a great many tracts, and that a good many are held by non-residents, it will be seen that at the date above mentioned less than one third of the voters were freeholders. Yet there is no question of the fact, that the great majority of those who were not freeholders, being two thirds of this population, were farmers, residing upon, and cultivating, the land of the United States, ready and anxious to purchase if they were able, and with the full intention of purchasing whenever they should become so. These men are not *squatters*, as they have been ignorantly termed. This opprobrious epithet was applied

in its origin, to persons who settled upon the unimproved lands of individuals, in the older states, with the intention of acquiring titles by occupancy, or of profiting by the defects in the legal titles of the right owners. They took possession of the property of other men, with the avowed intention of holding it. The people who settle on the public land in the west, violate no right, and intend no injury. A man settles on a tract which he wishes to buy, enhances its value by his improvements, and should he eventually not become a purchaser, leaves it in a better state than he found it, for the reception of another occupant; and there is no instance on record, of any attempt on the part of such persons, to claim the fee simple, or defraud the government. There was a law passed, many years ago, to prevent the intrusion upon public land, and to punish the destruction of timber; but the government, finding that this kind of occupancy was beneficial to the public, never enforced the law.

Some light may be thrown upon this topic, by reference to a common traffic in the new states, known as the *sale of improvements*. By a tacit and long established understanding, persons who settle on the public land, acquire a sort of popular title to occupancy; no one interferes with the possession of another, nor can a purchaser, without incurring great odium, buy a tract, on which an individual may be settled. Such persons are usually of the migratory class, and often move away, leaving their improvements to the next comer; but they more frequently sell them, either to those who like themselves have no title to the land, or to such as propose to purchase the soil. They sell simply the house and fences which they have put up, and the popular right to occupy the particular tract of public land, which they happen to have settled upon. The fact that such improvements command a price, and the universality of this practice, shew that the

land is not injured, but benefitted, by the occupancy of such settlers.

If the fact be, that there are communities in which two thirds, being farmers, desire to become freeholders, but are unable to purchase land at the price demanded by the proprietary, ought not the proprietor, being the government, to reduce its price? We have thought that it ought; but several years have passed since the above data was collected, and the opinion just indicated, formed—the circumstances of the country have changed—and we should now give such a decision with some hesitation.

But other facts are worthy of attention. Fertile as the soil of the west is in general, there are extensive tracts which at present are unsaleable, or of no value. These are, immense prairies, destitute of timber and water—river bottoms, subject to inundation—and sterile tracts. In the state to which we have just alluded, and some others, there are vast regions in which the open prairie is the predominating surface. The soil is generally fine; the water is found at a short distance below the surface; but timber is indispensable for fencing, for fuel, and for building, and without it these lands cannot be settled. But these prairies, as we have shown under another head, are annually decreasing in extent. This result is only produced, however, in the neighborhood of thick settlements. Would it not be wise to accelerate such a process by artificial means, and to offer inducements which might tempt settlers to venture into the open prairies, and to propagate timber by planting? The inundated bottoms are only valuable for their timber, which is often fine, but the lands are rarely purchased on account of that single advantage, as they are generally distant from the arable prairie lands. The soil is frequently excellent, and sometimes very choice, but it will not sell until the country shall become densely settled, and a sufficient surplus wealth shall exist, to enable the inhabitant to em-

bank and reclaim it. These bottoms are not only valueless in themselves, but by their unhealthiness contribute to reduce the value of the adjacent lands. The climate of this region, the soil, the water, and the conformation of the country are salubrious ; the causes which produced febrile and bilious diseases formerly, are mostly removed in all the dense settlements ; the river bottoms alone, and the surrounding country, remaining a melancholy exception to the general and rapid improvement in this particular. If the government would give away such tracts, to any who would reclaim them, it would gain in the enhanced value of the adjacent lands, and the inhabitants would be incalculably benefitted in the removal of serious nuisances. As to the other class of unsaleable lands, the sterile—it is to be remarked, that a large portion of it is poor only in comparison with the fine lands of this region. Things which are offered for sale, are valued by comparison with other things of the same kind, and by the eagerness of one party to buy, and of the other to sell. Thus valued, this land is worth nothing. No man will have it, at the price demanded, when he may have better land at the same money. By comparison with other property of the same kind, it sinks into utter nothingness ; it cannot acquire an adventitious value from the eagerness to buy of a purchaser who has a boundless region before him, and it will only be brought into market by the anxiety of the owner, evinced in a reduction of price so liberal as to tempt the cupidity of the buyer.

Another view of this question is not unworthy of consideration. Referring again to the state of Illinois, it will be seen that this state contains a little over thirty five million acres of land, and that in 1829 thirty millions remained unsold in the hands of the United States ; the balance of five millions including the whole amount of sales and grants, whether to the state or to individuals. The sales since that time would vary these proportions,

a little: but the principles are the same. The peopl of Illinois own one seventh of the whole quantity, the United States the other six sevenths; yet the people of that state alone defray the expenses of their own government, while its benefits are enjoyed by the general government, to an extent, in some degree proportionate to the size of their domain. Every new county that is established, every court house that is built, every road that is opened, every bridge that is erected, enhances the value of real estate; and of the land thus enhanced in value, the United States owns six acres, where one is owned by the state, or by the individuals who pay for the making of such improvements. That the general government is daily receiving substantial benefits, resulting from the expenditure of the money and labor of the western people, is evident; and it is worthy of inquiry, whether it be not bound, in justice, to discharge a debt thus created, and what should be the extent and character of the remuneration. It is said that congress has been harassed by appeals to its generosity, on the part of the western people. Is it not probable that those appeals have rather been made to the *justice* of that body, and that there has been in fact, an interchange of benefits, which has been mutually beneficial? The inquiry lies within a narrow compass. In all the Western States, (Kentucky excepted) the general government owns land; to none of those states does it pay taxes. It has its ample share of all the advantages resulting from the local governments: the civil protection afforded by the latter, and the public improvements made by them, invite population, and by converting a wilderness into a civilized country, render those lands saleable, which otherwise would remain unproductive. Does not this state of things impose an obligation on the Union, to aid in carrying on that process, by which, as the largest proprietary, it is the greatest gainer? If the western people ask the discharge of that obligation by a reduction

in the price of lands—by donations for schools, or for internal improvements—or in any other way, the claim is entitled to a respectful consideration.

We do not infer from this reasoning that Congress is bound to comply with a demand, even of a majority of the western people, to reduce the price of land. She acts as the trustee of all concerned. The state in which the lands lie is one party, and all the other states, another; the government, and the purchaser, have each an interest. Yet these are not conflicting, but harmonizing interests; and that policy which should advance them all, without leaning to either, would alone be wise. It is not expected that the government should drain the population from the old states, by offering inducements to emigration to the new; nor would she have the right to retard the settlement of the new states by withholding the land from sale, or demanding for it an extravagant price. There are various reasons why the price of public land should be reduced to the lowest practical point. It is good policy to increase the class of freeholders, to arrest the footsteps of the migratory poor, and settle them down upon the soil; to elevate the character of the citizen, by holding out to him the rewards of industry; to convert hunters and labourers into farmers; and to attach men firmly to the government under which they live, by making them holders of property. But these desirable results would be retarded, not advanced, by reducing the price of land too low, and by putting it at such a price as might induce capitalists to invest large sums in this species of property, thereby converting extensive tracts into private estates, to be withheld from sale, and from being inhabited, and to remain in unproductive wilderness, for long and indefinite periods. Again, these sales are to be conducted with impartiality; the interests of one state are not to be promoted in preference to those of another, nor

is any state to derive exclusive advantages from the gov ernmental action over its property.

It should be recollected also, that the government, being the largest holder of land, in this wide region holds in her hands the power of regulating to some extent the price of real estate. Her interest amounts, in the newest states, to nearly nine tenths of the whole—in the elder of the western states, it is still great—in the aggregate it is vastly greater than that of individuals. A large and industrious population of farmers have become owners of land here, by purchase from the government. They have been the pioneers, and have endured hardships which do not now beset the path of the settler. Those who came first gave two dollars, others have given one dollar and a quarter, for their land; and if they, in the face of the difficulties which then surrounded the emigrant, when there was no market, and no money, could afford to give these prices for land, their successors can still better afford them now, when money is abundant, trade active, and the country improved. And the questions may be fairly put, whether Congress could *justly* depreciate the value of the lands which she has sold, by now reducing the price of the adjacent land—and whether she is not bound to protect the interests of those to whom she has sold, as much as to conciliate the favor of new customers? It will be seen also, that however plausible the argument in favor of the reduction of price might have been a few years ago, the considerations which are to be thrown into the opposite scale have been, and are still, daily and hourly increasing: the danger from Indian hostilities has been removed—the hardships of settlers have been decreased—the whole country has been made accessible by roads and steam navigation—improvements have spread widely—manufactories have been established and markets opened—land is actually worth more than at any former period—and the immense increase of freeholders has created a

numerous and rapidly growing class of citizens whose interests are directly opposed to any measure which would depreciate the value of real estate.

Petitions have often and earnestly been pressed upon Congress, to grant the right of pre-emption to actual settlers, and such laws, limited usually in their duration, and sometimes confined to particular classes of claimants, or sections of country, have been passed. As a general rule they have been uncalled for by any principle of justice, and liable to great abuse. In a few instances, where persons have settled in a district of country before the land was brought into market, it was proper, on the opening of the land office, to give them the pre-emption right; but in a large majority of cases, such laws have been unjust towards the *bona fide* holders of land, and injurious to the government, while they have been productive of a vast deal of dishonest speculation. The class who are ostensibly to be benefitted have seldom any claim to the indulgence extended to them, and as seldom avail themselves of its privileges. The idea of protecting the actual settler carries an air of popularity about it, which renders it wonderfully efficient in the hands of the men who *love the people*, and who propose measures of this kind merely for effect. For one farmer who avails himself of a pre-emption right to secure for his own use, the land which he occupies, there are ten occupants who never intended to purchase, and who sell to a speculator that which was improperly given to them.

On the whole, it seems doubtful whether any improvement can be made in the present plan of selling the public lands. The system is simple, and equitable; and vast as the concerns of this department are, they are now managed with admirable fidelity and correctness. So long as the United States shall continue to occupy the existing proprietary relation towards the western country, there will probably be but little change in this part of her policy.

But it has been suggested that the government ought to divest herself of the character which she now sustains in relation to the public domain. In a report from the treasury department made at the opening of the first session of the twenty second congress, we find the following remarks:

"The sources from which the revenue has hitherto been derived, are the imports, public lands, and bank dividends. With the sale of the bank stock, the latter will cease, and, as the imports, according to any scale of duties which it will be expedient, and practicable to adopt, will be amply sufficient to meet all the expenditure, that portion of the revenue heretofore drawn from the sale of the public lands may be dispensed with, should congress see fit to do so.

"On this point, the undersigned deems it proper to observe that the creation of numerous states throughout the western country, now forming a most important part of the Union; and the relative powers claimed and exercised by congress and the respective states over the public lands, have been gradually accumulating causes of inquietude and difficulty, if not of complaint. It may well deserve consideration, therefore, whether at a period demanding the amicable and permanent adjustment of the various subjects which now agitate the public mind, these may not be advantageously disposed of, in common with the others, and upon principles just and satisfactory to all parts of the Union.

"It must be admitted that the public lands were ceded by the states, or subsequently acquired by the United States, for the common benefit; and that each state has an interest in their proceeds, of which it cannot be justly deprived. Over this part of the public property, the powers of the general government have been uniformly supposed to have a peculiarly extensive scope, and have been construed to authorize their application to purposes of education and improvement to which other branches

of revenue were not deemed applicable. It is not practicable to keep the public lands out of the market; and the present mode of disposing of them is not the most profitable, either to the general government or to the states, and must be expected, when the proceeds shall be no longer required for the public debt, to give rise to new and more serious objections.

"Under these circumstances, it is submitted to the wisdom of congress to decide upon the propriety of disposing of all the public lands, in the aggregate, to those states within whose territorial limits they lie, at a fair price, to be settled in such manner as might be satisfactory to all. The aggregate price of the whole may then be apportioned among the several states of the Union, according to such equitable ratio as may be consistent with the objects of the original cession, and the proportion of each may be paid or secured directly to the others by the respective states purchasing the land. All cause of difficulty with the general government on this subject would then be removed; and no doubt can be entertained, that by means of stock issued by the buying states, bearing a moderate interest, and which, in consequence of the reimbursement of the public debt, would acquire a great value, they would be able at once to pay the amount upon advantageous terms. It may not be unreasonable also to expect that the obligation to pay the annual interest upon the stock thus created, would diminish the motive for selling the lands at prices calculated to impair the general value of that kind of property.

"It is believed, moreover, that the interests of the several states would be better promoted by such a disposition of the public domain, than by sales in the mode hitherto adopted, and it would at once place at the disposal of all the states of the Union, upon fair terms, a fund for purposes of education and improvement, of inestimable benefit to the future prosperity of the nation.

"Should congress deem it proper to dispense with the public lands as a future source of revenue, the amount to be raised from imports, after the 3d of March 1833, according to the foregoing estimate, will be $15,000,000; but, with a reliance upon the public lands, as heretofore, it may be estimated at 12,000,000 dollars, to which, as the case may be, it will be necessary to adapt the pro vision for the future.

"Whatever room there may be for diversity of opinion with respect to the expediency of distributing among the several states any surplus revenue that may casually accrue, it is not doubted that any scheme for the encourag ing a surplus for distribution, or for any purpose which should make it necessary, will be regularly discountenanced. There is too much reason to apprehend that a regular, uniform dependence of the state governments upon the revenue of the general government, or an uniform expectation from the same source, would create too great an incentive to high and unequal duties, and not merely disturb the harmony of the union, but ultimately undermine and subvert the purity and independence of the state sovereignties."

We shall briefly examine these suggestions.

The policy of the government in relation to the public lands has a twofold object: 1st, The reimbursement to the national treasury, of the funds expended in the purchase of those lands, and the payment of the national debt, for which they were pledged; and 2nd, an impartial distribution of the lands among the settlers of the region in which they lie.

It is now, we believe, a conceded point, that the equitable, as well as the legal and actual title to the public domain, is in the general government. The whole of it has been acquired with the means of the nation. Her treasure, her diplomacy, and her military force, have been used in the purchase, and in the protection of this noble property.

Any attempt to divest the Federal Union of her interest in it, until the debt created by its acquisition be wholly discharged, would be clearly inequitable; and this too, we assume to be a point conceded, or too obvious to admit of cavil. But is this all; and are we certain that the precise nature and amount of the expenditure alluded to are understood? The mere purchase money is one thing; but has any calculation been made, for the purpose of ascertaining what proportion this bears to the multifarious contingencies which have arisen out of the acquisition? The pay of the functionaries engaged in negotiations, and of the additional troops required by this extension of territory; the cost of surveying and sale; the annual expense of legislation, and of the general land office; the interest upon these expenditures; and a variety of other items, which, under the pen of a close calculator, would swell to an astonishing amount, would all be legitimate charges upon these lands. Nor can there be any doubt, that the liberal donations for public purposes, *within the territory in which they lie*—for roads, canals, schools, &c., would also be fairly chargeable to this fund, in all cases except where equivalents have been paid by the individual states for such grants. It should also be recollected, in estimating the amount of the purchase money, that at every treaty held with the Indians, for the extinguishment of their titles to their hunting grounds, there has been given to them, besides the specified price of the land, an amount greater or less, in presents; and that in many cases, the purchase money has been stipulated to be paid in annuities, some of which are to be perpetual. Supposing then that all the actual disbursements, heretofore made from the public purse on this account, be accurately ascertained, by what rule of arithmetic shall we arrive at any correct estimate of the amount which will be required, to pay annuities for twenty years, for thirty years, for so long as a given tribe shall remain a distinct

nation, and during the lives of numerous individuals who are pensioners upon this fund?

But again. Is it a settled point that the interest of the nation in this property, *ought to be* extinguished, as soon as she is reimbursed? We apprehend not. Admit that an account which the United States may have opened against these lands, and in which she has charged them with every expenditure made in reference to them, direct or consequential, has been balanced by the receipts from the land offices, can a good reason be offered, why they should not be continued to be held by the government as a source of revenue? No one would contend that an individual, having derived from an estate a profit equal to its cost, would be bound by any rule of propriety, to convey it back to his grantor, or throw it into the common stock. With as little justice can the United States be called upon by the individual states, or either of them, to make a similar surrender. The very idea of *property*, excludes such a conclusion; for it not only includes present possession and use, but all ulterior and accidental advantages which may, by any possibility, accrue to the owner. If the United States has a clear and perfect title to this land, it is a gratuitous assumption for any other party than herself, to prescribe a limit to the tenure which is in its own nature indefinite.

We learn from the treasury report, that there are now but three sources of revenue to be relied upon for the support of our government, viz: imports, public lands, and bank dividends. It is proposed to sell the bank stock and apply the proceeds to the payment of the public debt, to dispose of the lands to the several states in which they lie, and to rely solely on the duties upon imports. As to the prudence of depending upon a single source of revenue which may be deteriorated by unforeseen causes, we shall not venture an opinion; but we apprehend that this policy cannot be adopted without begging a question, or

in other words assuming the correctness of doctrines which are hostile to the opinions of a large portion of the nation At a time when a tariff is odious to the whole population of some states, and to entire classes of citizens in others, would it be safe, would it be consistent with that principle of reciprocity, that spirit of compromise, that patriotism, to say all in one word, which ought to regulate the economy of a great nation, to abandon all other sources of revenue, and depend upon the single one which has excited more dissention than all the others put together? If it be replied that no objection is made to a tariff which is resorted to as a financial resource, and that the propriety (or right) of laying duties on imports, is only questioned when they are attempted to be used to support manufactures, or to encourage sectional industry, we ask, is there no danger, that when duties on imports should become the sole dependence of the treasury, they would have to remain as high as they now are; that the identical duties now objected to would be retained; and the cause of complaint remain the same, under a change of name? There may have been conclusive reasons in favor of the creation of the existing system of duties, but would those reasons reach forward, and justify its adoption as a *permanent* feature in the policy of the government? And shall we put it out of our power to reduce or discard those duties, when the necessity which induced their adoption shall have ceased?

Another consideration strikes us as worthy of notice. Revenue should be raised in such a manner as to bear equally upon all classes of society; none should be exempted from the burthen, nor any oppressed by its weight. The perfection of a system of finances, would be found in the exact operation of this principle, reaching to every individual in society, and extending to each his equitable portion of the public burthen; but as perfection cannot be expected to be attained in transactions so gigantic and

complicated, the nearest approach to it, becomes the most rational substitute; and this will be found in adopting the principle to which we have alluded as far as practicable. Now it seems very clear, that by multiplying the sources of revenue, we should increase the chances of making it bear upon all classes of society, and on the other hand, by diminishing their number, we shall multiply chances that some would be oppressed. Especially does it appear to us, at least *probable*, that if a *single* source of revenue be depended upon, the burthen will be unequally borne, and that some classes will occasionally, and some perhaps always, be exorbitantly taxed, in comparison with others. These considerations are not conclusive, but are thrown out as rational doubts. If it can be shewn that duties on imports can be extended to so great a variety of articles, that all our citizens, shall by these means, be equally taxed, and the industry of none be vexatiously burthened, or if these desirable results can be produced to a reasonable extent, then our objection will have been answered.

We may mention in this connexion, a proposition to divide the annual nett proceeds of the public lands, among the several states, in the ratio of their representation, to be expended for the purposes of internal improvement and education. If it be determined that these proceeds are not to be appropriated to the ordinary purposes of revenue, but must have a specific application, it is still not clear, that such a distribution would be judicious or even just. If the distinction between federal interests and state interests is to be persisted in, and the line between state and federal rights broadly and strongly marked, the question arises, upon what ground this can be claimed as a *state* fund? It has not been created by the action of the state governments, nor earned by the prowess, the talents, or the labor of citizens of states, acting as such. The claims of individual states, as far as any existed, have all been

ceded to the Union; and the subsequent purchase, with all its incidental expenses, was made with the national treasure. That Congress has a clear right to divide the surplus revenue of the Union among the states, is not denied; but the propriety of thus parceling *this* fund, in preference to any other does not seem obvious. We should place it exactly on the same footing with the revenue from any other sources. Should there then be a surplus of the aggregate annual receipts, and its distribution be urged as a concession to the opinions of those who deny the right of the general government to expend money for objects of national improvement, we should not demur, because we would yield much—almost any thing—to a liberal spirit of compromise. But we should yield it only as a concession. We doubt the justice of dividing a fund disposable for general purposes, according to population. A national fund should be expended where it is most wanted, and where it would be most extensively useful. The most populous state might not require the largest expenditure; and the least populous might stand in the greatest need of assistance. A sum expended in one state in making a road, is not necessarily chargeable to that state as if for its exclusive benefit, because the advantage may be equally great to adjacent states. An immense sum of money was laid out in the states of Maryland, Virginia, and Pennsylvania, in making a road from Cumberland to Wheeling, which is less beneficial to the two last named states, than to those lying west of them. The correct principle seems to be, not that the expenditures should be made within certain limits, but that the benefits should be fairly distributed. This would be best effected by the concentrated action of one government. Still, on this point we should not be strenuous. We should deprecate the division into twenty-four parts, of a sum, which at all events will be small, in comparison to the objects to be effected, and which by this process would

become comparatively inefficient. But it is better to forego such advantages, than to gain them by violence to the feelings of a respectable minority.

Another very important consideration is involved in this question. One of the greatest advantages secured to the people of the United States by the proprietary action of the government over these lands, has been the equitable mode of their alienation to individuals. This is a matter which comes home to men's business and bosoms. There is no power exercised by the government, which is regarded with such jealousy, or should be exerted with so much circumspection, as that which reaches to the fireside of the citizen—that which affects his *home*, and the maintenance of his family. Every thing else may be endured, if there be security, comfort, and abundance in our dwellings. Whatever other privilege we may resign, we will not suffer that of pursuing happiness, to be ever jeoparded.

The right to emigrate, is not only a natural, but a chartered right. Our citizens are secured in the privilege of removing from one state to another, as well as in the exercise of all rights in the state of their adoption, which they enjoyed in that of their recent citizenship. It is our policy to be one people ; to throw wide open all the avenues of internal intercourse and trade ; to leave private enterprise unshackled, and industry free to exert its energies, wherever they may be most usefully employed. We are an active and a migratory people, accustomed to independence, impatient of restraint, and unwilling to endure any discomforts, which may be removed by exertion, or escaped by a change of residence. We have no entailed rights to bind us to the spot of our nativity, and but slender hereditary attachments ; and we not only highly value, but will maintain at every hazard, the privilege of seeking subsistence and happiness, wherever we please to think they may be found. We do not recognise

the moral right existing in any body of men, to monopolise the soil which was given to us and our children by a bountiful Providence, to stay the footsteps of industry and the arts, or to shackle the advancement of letters, civilization, and Christianity. If we can ever justify our banishment of the Indian from his hunting grounds, it must be upon this principle; he was a monopolist, occupying more than he could use consistently with the good of mankind; he was a barbarian, hostile to the social, the useful, and the elegant arts of civil life. It is a legitimate exercise of governmental care, to respect such feelings, and cherish such rights; and if by design or accident, the government has possessed itself of the means of gratifying a national propensity, and of dispensing the blessings of a great national source of prosperity, it should pause, and reflect maturely, before it resigns a power so benign, and so extensive.

The settlement of the western lands, is a matter of national concernment; one in which all the states are interested in a greater or less degree. To one they afford homes for her industrious poor, or enterprising youth, to another an outlet for her manufactures, to a third a market for her commercial imports; while all are obliged to view them as the future birth place of the millions of freemen, who will soon constitute the majority of the nation. We cannot shut our eyes to the truth, that in the proportion in which industry, moral habits, intellectual cultivation, and sound national principles, shall be planted and cherished in this region, will be the predominance of those virtues in the future guidance of our national councils. The history of other nations affords no parallel to that anomalous and magnificent process which is now going forward in our country. The nation is silently but rapidly building up its own future seat of empire. The howling wilderness, which our immediate ancestors viewed with carelessness, and partially explored, with extreme

difficulty and danger, is fast becoming the centre of power, the seat of wealth, the theatre upon which the nation in its matured vigor will exhibit its concentrated energies. *The nation*, as such, has a stake in the growth of this country, which she cannot value lightly.

In her proprietary character, the government has been enabled to establish the boundaries of newly organised territories, so as to give to each future state its just limits. The country has been surveyed, divided, and prepared for sale, under a wise and uniform system. The sales have been conducted with order, impartiality, and publicity. The dweller in Maine or in Georgia, may by reference to public documents, know the contents and price of each tract of land in the west, and the time and place of sale, with as much certainty as an inhabitant of the vicinity. The price of land is invariable. These are advantages which should have great weight in the public mind. If the citizens of the Atlantic states appreciate the privilege of emigration to the westward, and the advantage of a fair competition in the market of new lands; and if the people of the western states place a just value upon the security of their titles to real estate, upon the harmony which now prevails in its distribution, and upon the regular flow of that full and fertilizing tide of population, which is now pouring in upon them—they would pause, each of them would pause, before they would submit to the hazardous experiment of a change of policy, which might give us confusion in the place of order, and entail upon us the reverse of all that we value, instead of what we enjoy.

But we are told that the relative powers claimed and exercised by congress, and the respective states, over the public lands, have been gradually accumulating causes of inquietude and difficulty, if not of complaint. This is in part true; but before we assent to the necessity of applying any of the proposed remedies, let us examine the

extent of the grievances complained of, and inquire whether they be real or supposititious. Have the people of the western country any just ground of complaint? Are they really dissatisfied? Fifty years ago, the United States had not a single settlement west of the Ohio river, if we except a handful of inhabitants at the French villages; and in 1793 the army of General Wayne marched through Ohio, then a wilderness. So lately as 1812, the inhabitants of Illinois and Indiana were so few in number, that they protected themselves with difficulty against the Indians. Tecumseh with a little band, of a few hundred warriors, kept the whole frontier in terror. At this time the state of Ohio alone contains over 1,000,000 of inhabitants; and the aggregate population of Ohio, Indiana, Illinois, and Missouri, is more than two millions. If to these we add the states of Alabama, Louisiana, and Mississippi, in which the lands are similarly situated, and which have been chiefly settled within the same period, we have a population of three millions, without including the territories of Michigan and Arkansas, which contain a hundred thousand more. In fifty years a region, containing more than half a million of square miles, has been reclaimed from the dominion of the savage; seven states have grown up and been admitted into the Union, and two others are ripe for admission; a population of three millions has been accumulated, consisting chiefly of the agricultural class, a large portion of whom possess freeholds, and all of whom are blessed with a greater degree of plenty, and burthened with fewer cares, than any other similar number of civilized people. Fifty years ago, the canoe and the pirogue were the only boats on all the noble rivers of the west, with the exception of a few barges; since then, seven hundred steam boats have been built in this region, with its native timber and materials, and employed upon its waters. In 1826 the amount of capital invested in steam boats, by the citizens of Cincinnati

alone, was upwards of 500,000 dollars, the imports of that city were more than 2,000,000 of dollars, and the exports 1,000,000. In the same region there are more than a dozen reputable colleges, together with respectable medical, theological, and law schools. Books are published to a considerable extent. In Cincinnati alone, very many volumes a day, issue from the press. These, with a thousand other facts which might be added, are surely not the indications of an oppressed people, or of a country crippled in its resources, or checked in its advance to greatness.

The public improvements that have been scattered over this valley, by the munificence of the government, however scanty they may seem to a sanguine and enterprising people, ardent in their views, ambitious in their public spirit, and impatient of delay in their rapid march to power, have been worthy of a great nation. The Cumberland road alone, is a monument of national beneficence. Designed to stretch through an extent of eight hundred miles; meandering for sixty miles among the cliffs and precipices of almost inaccessible mountains; interseeting the noblest rivers of the west, and crossing her fertile and extensive plains; studded in its whole length with elegant and durable bridges—such a work speaks more in favor of the advantages of the connection between the western people and the government, than volumes of abstract reasoning. And this is but a part of what has been done. The shores of the northern lakes have been surveyed, and their facilities for commerce ascertained; immense sums have been laid out in improving the harbors of the lakes and the navigation of the large rivers; extensive grants of land have been made to aid in the construction of roads and canals; in short, millions of money have been in various ways appropriated to advance the best interests of this region. That these appropriations have fallen far short of our just proportion of the public treas-

ure, and have been inadequate when compared with the sums expended on the sea coast, must be admitted; but they have greatly exceeded any expenditure which could have been reasonably expected, under the action of the several states, had they possessed the land.

Of what then do the western people complain? Are they taxed by the government? No. Are any precluded from voting, or ineligible to office? None. Do any starve, are any houseless, or naked, or in prison for debt? These are unknown evils. Are standing armies quartered among the people, or do the myrmidons of government eat out their substance? Nothing of all this. Do seed time and harvest fail? Does not the labor of the husbandman yield an abundant reward? Are his hard earnings riven from him by fraud or violence? Do the oppressors grind the poor? Are not life and property secure? Is there any to molest or make afraid, the man who sits under his own vine? We need not pause for a reply: the face of nature, the condition of society, and the happy estate of man in this favored region, teeming with abundance, peace, and cheerfulness, all testify against the existence of any widespread individual distress, or civil misrule.

But complaints have been made; they are matters of record, and their nature being distinctly known, they may be easily examined. In the first place, it may be remarked, that the western people have sometimes been misunderstood, and have been considered in the light of dissatisfied remonstrants, when they only asked the correction of error, or the redress of an accidental grievance. Such were the petitions of several of the states, for exchanges of the lands given for the support of schools, when portions of them proved to be worthless. In most instances, we believe in all, valuable considerations were given by the states for those lands, and of course when large parcels of them were ascertained to be deficient in

the value which they purported to bear at the time of the transfer, there was precisely that kind of failure of consideration, which would support an equitable, if not a legal claim upon the grantor. There have also been hundreds, perhaps thousands, of instances of individual grievance, which demanded legislative interference; wrongs for which existing laws provided no remedy, cases where titles to land have become forfeited by the mistakes of officers, or could not be completed in consequence of statutory defects, or inconsistencies. Laws intended to afford general relief, and framed with due care, have sometimes been so worded, as to omit whole classes of sufferers, who were thus thrown again upon congress, in the character of petitioners. Nor can it be denied, that individuals have sometimes mistaken their remedy; that even meritorious individuals have sought that remuneration from the generosity of congress, which was denied them by stern justice; that imaginary claims have often vexed the ear of government; that the dreams of self-love, and the speculations of the visionary and the avaricious, have often been intruded upon the public. When we consider the vastness of the public domain, the number of citizens interested as purchasers, as land holders, or as persons desirous to purchase, it will be seen that the petitions to congress, must unavoidably be numerous, and that their number affords no indication of public dissatisfaction, or of an importunate spirit. The captious may indeed complain of importunity, and the indolent or undiscerning, whose want of information disables them from drawing the proper distinction, between claims of right and petitions for bounty, may turn a deaf ear; but such are not the conclusions of enlightened statesmen, or liberal men. Nor are these the *complaints* of the country; they are not grievances tending to disunion, or which ought for a moment to disturb the equanimity of either of the great parties to the question before us. They are claims

of right, to be decided upon evidence; or they are supposititious demands, the rejection of which can excite no public irritation. The whole of the cases to which we now allude, are, in short, analogous to suits at law, and we are not prepared to admit that the decision of the former, would ever cause public dissatisfaction, any more than the adjudication of the latter. The reader of the congressional proceedings, and even the member of congress, who does not reflect sufficiently upon the peculiar connection between the western states and the general government may be startled at the *number* of the petitions presented to that body by western members, and draw unfavourable inferences from that fact; but the suggestions which we have thrown out will show the injustice of such deductions.

Such being the extensive, the complicated, and the important interests, involved in this branch of the subject, and the parties to be affected being so numerous, differences of opinion may well arise. But these are generally collisions of interest, and not controversies as to principles. The fundamental rules, which ought to govern these sales, are well settled, and thoroughly understood; but different classes of men, and the inhabitants of different sections of the country, entertain conflicting opinions as to their respective interests, and naturally seek advantages for themselves. Therefore we find a variety of modes of disposing of the public land, originating from various quarters, and advocated with untiring zeal, and admirable ingenuity.

Some of these plans have merits, some are merely specious, while many are not even seriously advocated by their projectors, but are mere hobbies, on which demagogues ride into office, and which are abandoned when the temporary purpose for which they were brought into existence, has been accomplished. The men who *love the people*, have been ingenious in every age of the world,

in giving a momentary importance to their own whims, or artful designs, by making them assume the appearance of public sentiment.

But should congress reject all these propositions, will the western states have cause to complain? Have they any reason to consider themselves oppressed, by the adherence of government, to a system under which they have enjoyed such unexampled prosperity? Will the minority be so deficient in patriotism as not to submit cheerfully to the decision of the majority? Will the generous west, heretofore so loyal, so patriotic in the hour of danger, so proud of her rising greatness, tarnish her young fame by disobedience, or by being guilty of the weakness of indulging resentful feelings? Far from it. The people are not oppressed, and cannot be persuaded to fancy themselves the objects of oppression.

We have already shown that the western country at large is in a prosperous condition; and when we read some of those injudicious speeches in congress, in which a contrary idea is held out, we are forcibly reminded of a beautiful oriental fable. A prime minister who had grown grey in office, was sentenced to death, on suspicion of mal-administration, but in consideration of his long service, his punishment was commuted, at his own request, to banishment to a deserted village. But on search, a depopulated village was not to be found in the whole empire. "Can that nation be badly governed," he exclaimed, "in which every village is prosperous?" He was reinstated.

A few facts will set this matter in its true light. Land is now sold in tracts of forty acres, at $1.25 per acre. For fifty dollars, an unimproved tract of forty acres may be purchased. In any of the states west of the Ohio river, a laborer can earn 75 cents a day, and if his living be supposed to cost 25 cents, which in this plentiful country is a large estimate, he can, by the labor of *one*

hundred days, or about *four* months, purchase a farm. But as the working days in a year, excluding bad weather, might not amount to more than 200, it may be safely asserted that a laborer can purchase a tract of 40 acres, by six months steady work, and that by the labor of a year he may purchase 80 acres. Again, a laborer can get his board, and *ten dollars* per month, the year round, which would amount to $120, and if $20 be deducted for clothing, he will thus be enabled to purchase a farm, in six months, or a larger one in a year. All kinds of stock can be raised in this country with facility, and at little cost. A good work horse is worth fifty dollars—a cow from five to ten dollars, a fat steer from ten to twenty, and hogs from two to five dollars per hundred pounds. A man then can purchase forty acres of land by the sale of a horse, or from four to six head of cattle, or ten hogs; and as individuals are not prevented from settling on the public lands, but rather encouraged, the means are thus afforded to farmers to acquire this property previous to the purchase of the soil. Mechanic's wages are much higher; those who work in the most useful arts, such as carpenters, blacksmiths, shoemakers, &c. find ready employment. An individual of this class may earn money enough to buy eighty acres, in six months—some of them can earn their acre per day. A person who teaches a common English school, receives from $2 50 to $3, per quarter for each pupil, and such persons are in great demand. A school of thirty scholars will yield ninety dollars per quarter, or $360 per year. Let it be further taken into consideration, that the extensive public works now in progress under the general and state governments, furnish employment, and high wages, to laborers and mechanics, and supply a circulating medium, and it will be seen that any industrious man may buy a farm.

If then the people are not suffering material injury, but are really prosperous, would it be wise to change the ex-

isting system, merely because it may jar with some political hypothesis of state rights, or jostle some abstract theory, relative to the balance of power in our thriving family of republics? Will the people suffer themselves to be deprived of the solid advantages in their possession, by the promise of benefits of doubtful value? Are the speculations of politicians to be for a moment weighed in the balance against the rapid advance of the country, the peace, the security, the thousand blessings, which are not visions of the brain, but substantial present enjoyments? Above all shall we be drawn into these delusions by imaginary distinctions, which are attempted to be drawn, between the state and federal governments, both of which are equally *ours*, and have in fact no separate interests?

There is no cause for dissatisfaction. The next question which we proposed to examine, is in relation to the *existence* of that feeling. Is there, in fact, any discontent prevailing in the new states, towards the general government, in regard to the public domain? Ours is a country in which the murmurs of discontent are not suppressed, nor the hearty shout of approbation restrained. The oppressed find every where bold and able champions; the expression of public opinion is free, and the organs for disseminating opinions numerous. In the west especially, where the practice of stump-speaking prevails, and where candidates for popular suffrage are required to address the people, upon the various topics which agitate the public mind, the tone of public sentiment cannot be mistaken. Do we hear of tumultuous meetings, of inflammatory addresses, of threats to nullify the acts of the government, in these loyal states? On the contrary, although a high degree of excitability pervades the Union, and the slightest spark produces an explosion of indignant feeling, the western states are quiet. The tenants of the ant-hill, or the bee-hive, are not more industrious nor inoffensive. The only excitement is that of enter-

prise, the only hum that of business. Tariff, masonry, nullification, abolition, and Roman Catholics, vex them not. While the north and the south fright the land from its propriety, by the earnestness of their contentions, the west is in repose. As our nation laid the foundations of its greatness, while the rest of the world was at war, so the new states are quietly gaining population, wealth, and power, while the old are wasting their energies in idle contention. It is true, that politicians, in the dearth of subjects for popular discussion, declaim in good set terms about the public lands, assert roundly that the country is embarrassed, and declare its liberties in danger from the action of the general government. But where is the free country, or what the time, in which such harangues have not been made? They are "the cankers of a calm world and a long peace," the outbreakings of a restless ambition, which finding no excitement around it, endeavors to create the element in which alone it can live. But we assert, from an intimate knowledge of the western people, that a traveler may pass through the length and breadth of the new states, without hearing the public lands mentioned, *by the people*, in the tone of complaint. In particular districts, temporary excitements are gotten up, for special purposes, which subside when those purposes are accomplished. But the people at large are well satisfied with the present arrangement. In no portion of the Union is there more of a *national*, and less of a *sectional* feeling, than in the west. The western people have grown up under the patronage of the government, they have fought under its banners, they feel identified with its fame, and their affections are entwined around it. They feel, too, the pride of conscious strength. In promoting the prosperity of the whole nation, they are building up that great community, whose destinies will one day be swayed by themselves. They cannot be jealous of the power of the government, any more than a son is

jealous of the paternal authority, which will soon descend to himself.

We shall close this article, already longer than we intended, by adverting to the proposition to dispose of the public domain, to the several states, in which it lies. We should deprecate such a measure. Most of the arguments to be urged against it have been anticipated. If the present system teems with the advantages which we have enumerated, it would be inexpedient to relinquish them, for a measure of doubtful policy. If the "gradually accumulating causes of inquietude and difficulty," assigned as the chief reasons in favor of a change, are shown to be overrated or imaginary, those reasons cease to have weight. Let us examine the proposition a little more closely. One of the greatest advantages in the present system, is the *uniformity* which prevails in the price of land, and mode of sale. The lands of the government, although lying in different states, are all offered at the same price, the land offices are all organized alike, the manner of sale every where the same, and the regulations published by government are of general operation, and easily accessible. Should these lands become the property of the several states in which they lie, all this might be changed. One state might sell for cash, and another upon credit; one might determine to sell only to the actual settler, another might adopt a different arrangement; one might hold her lands at a high price, and another rate them low; or they might all engage in a ruinous competition, by endeavoring to undersell each other. That different systems would be adopted in the different states, we have ample reason to believe; and it is equally probable that those systems would be often changed. Publicity would be given to these several, and ever varying systems, through various different channels, and the emigrant would have to search the statute books and newspapers of a number of states, in order to ascertain

the relative advantages offered to the purchaser. Should the states enter into a competition to entice population, there is no knowing where the confusion would end, or to what extent the fierceness of contention, or the sordidness of speculation, might be carried; and these sister states, now so united in feeling, so happy in their prosperity, so closely allied by juxta-position and interest, might become the theatre of jealousies growing from year to year, and ending in settled animosity.

Several of these states have had fearful experience of the evil of creating the relation of debtor and creditor between the government and its citizens. In Kentucky, the lands south of Green river, were sold by the state, to her citizens, upon credit. Instead of proving a blessing, they have been a curse; instead of enriching her treasury, they have impoverished it. Every year brought the purchasers of land before the legislature, as petitioners, for extension of the time of payment; and although thirty years have elapsed since the sales commenced, the same process is annually continued. The expenses of legislation eat up all the proceeds. Nor is this all. The "Green river claim," has become a standing theme, as everlasting as the famous case of Amy Darden's horse. A number of counties are now interested in it, in which members to the legislature can only be elected, under a pledge to become its advocates, and a party is thus formed, of which the members, however highminded, are obliged by circumstances, to unite in supporting a measure of local popularity, even at the sacrifice of high general interests. In Tennessee, a valuable reservation of lands, set apart to promote education, was sold in a similar manner, and the proceeds released, here a little and there a little, until nearly the whole has been squandered; while the moral effect upon the ordinary legislation of the state, has been as pernicious as in the former case. In several of the states, banks have been created, and money loaned

by the state to the people. In every instance, the effect has been the same; a relief party has been organized, and prepared to appease the clamors of the people at every hazard. These instances all illustrate a simple proposition. Where the representative can confer on his constituent a pecuniary advantage, out of the public funds, there is a direct tendency to corruption. If the candidate for a seat in the legislature, can promise to sell lands to the voters at fifty cents an acre, for which the existing price is one dollar; or where a majority are debtors, will promise to postpone the day of payment; there will always be found men ready to become parties to such contracts. Such propositions, though at first made with caution, become sanctioned in the eyes of the people by frequent repetition, the doctrine grows popular, and candi dates, always quicksighted in discovering the road to office, espouse it with zeal. Under the present system, we are free from such abuses. Of the twenty-four states which compose the Union, but seven are occupied by portions of the public domain, and if we suppose it possible for the representatives from those states to unite, in advocating measures of the character alluded to, there would be a controling influence in the remainder, which would preserve the purity of Congress, and regulate the sales of land with impartial justice.

For similar reasons we should object to the proposed law to divide the *proceeds* of the sales of public lands among the states. Not only do we consider these proceeds to be as properly revenue, available for all the purposes of government, but we are sure that if any portion of them are to be expended for education, or internal improvement, the appropriations can be more judiciously made, and more economically expended by the United States, than by the states. Let those who are interested, inquire into the fate of some of the grants made to states for canals, and how the state legislatures have used the

funds given them for a specific purpose. Let them look at the disposition of the college and school lands in at least two of the states, and they will see that valuable tracts which would have commanded a large advance on the government price, have been given away under a wretched system of favoritism and collusion, by which pre-emption rights, were given to persons who had settled on these lands, after they had been set apart for a specific purpose. The abuses of this description are numerous, and intimately known to those who have been engaged in politics. They should warn us to beware how we rashly endanger so extensive a property, and risk the many advantages we enjoy, under our admirable land system, by giving up any thing to the state legislatures, which may be retained in the hands of representatives more able, more experienced, and equally responsible to the people.

The following is the estimate of the amounts of money which would be paid to the several states, out of the surplus revenue now in the treasury, should the proposed distribution of the proceeds of the public lands take place :

	Share for each State.	15 per cent. to new States.	Total to new States.
Maine,	689,028		
New Hampshire,	464,587		
Massachusetts,	1,052,953		
Rhode Island,	167,650		
Connecticut,	513,472		
Vermont,	484,133		
New York,	3,309,503		
New Jersey,	551,865		
Pennsylvania,	2,325,424		
Delaware,	130,120		
Maryland,	700,079		
Virginia,	1,765,554		
North Carolina,	1,103,563		
South Carolina,	784,918		
Georgia,	741,423		
Kentucky,	1,072,660		
Tennessee,	1,078,578		
	x 2		

	Share for each State.	15 per cent. to new States.	Total to new States.
Ohio,	1,614,400	230,844	1,845,244
Louisiana,	296,172	67,561	363,733
Indiana,	591,728	325,485	917,213
Illinois,	271,078	483,760	754,838
Missouri,	224,972	174,354	399,327
Mississippi,	190,367	788,403	978,770
Alabama,	452,826	541,940	994,766

We hope that this controversy, if a controversy it is destined to be, will be conducted upon broad and national principles; that sectional interests will not be permitted to mingle in the discussion; and that this noble domain, the heritage of the American people, purchased with their treasure, and peopled under the auspices of their government, will remain, at least for a time, under the disposal of the national legislature. Whenever the wisdom or the liberality of Congress shall become questionable, or its purity less than that of the state legislatures; whenever the public lands shall be unequally distributed, or their proceeds appropriated with partiality; whenever the western states shall be oppressed, or the people believe themselves the objects of oppression, we shall advocate the disposal of the lands to the states in which they lie, or the distribution of the proceeds—but not until then.

The following data are condensed from an able report of Mr. Woodbury, the present Secretary of the Treasury:

The whole amount of lands now owned by the United States Government, within the states and territories, exceeds 330,000,000 of acres, and that owned west of the Mississippi, and of Missouri and Arkansas, exceeds 750,000,000. Of this last, about 80 millions have been appropriated to Indian tribes, the balance remains undisposed of. The Secretary estimates the one fourth or 270,000,000 as waste land, or covered with water, and one half of the whole too poor for cultivation for many years

Of the land owned by the government within the states and territories, there has been surveyed and offered

for sale from the year 1789 to 1834, 122,000,000 of acres, not one third of which has been sold. The whole proceeds of the sales during that time, have amounted to about 50,000,000 of dollars, and the net proceeds after deducting charges, for purchase, surveying, management, &c., are about 4,000,000 of dollars.

The quantity actually sold from 1789 to 1834, a period of 45 years, after deducting about 6,333,333 acres, sold under the old credit system, and which afterwards reverted, was about 37,500,000 acres. The quantities bestowed in bounties, during the last war, and for schools and other purposes is about 16,000,000 of acres.

The sales never amounted in one year to one million of acres until 1815. In 1817 they amounted to 2,500,000 acres, and in 1819 under the credit system, and high price of cotton, to 5,500,000 acres, thus exceeding the sales of 1834, considerably. The price of cotton fell in 1820, and left the country indebted for lands, to nearly the amount of 22,000,000 of dollars. The credit system was then changed to cash, and by the relinquishment of the lands to the government, the debt was nearly extinguished. The annual sales again fell below one million of acres, and continued thus until 1825. In that year the price of cotton began to rise, and the quantity of land sold also increased, and in the year 1829, again exceeded one million of acres. From 1829 to 1834, there has been a steady enlargement of the quantity sold. In 1834 it amounted to 4,000,000 of acres, and in 1835, is estimated at 9,000,000 of acres. The Secretary estimates, that from the increase of our agricultural population, and other causes, the sales for the next six or seven years, will exceed 1,000,000 of acres, and that the proceeds may be estimated at from 3 to 6,000,000 annually. The exports of cotton in 1790, amounted to 500,000 pounds, in 1834 to 380,000,000 of pounds, whilst the home manufactures consumed 90,000,000 during the same year. We now

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